101

Syllabus

TECHNOLOGY FOR HIGHER EDUCATION
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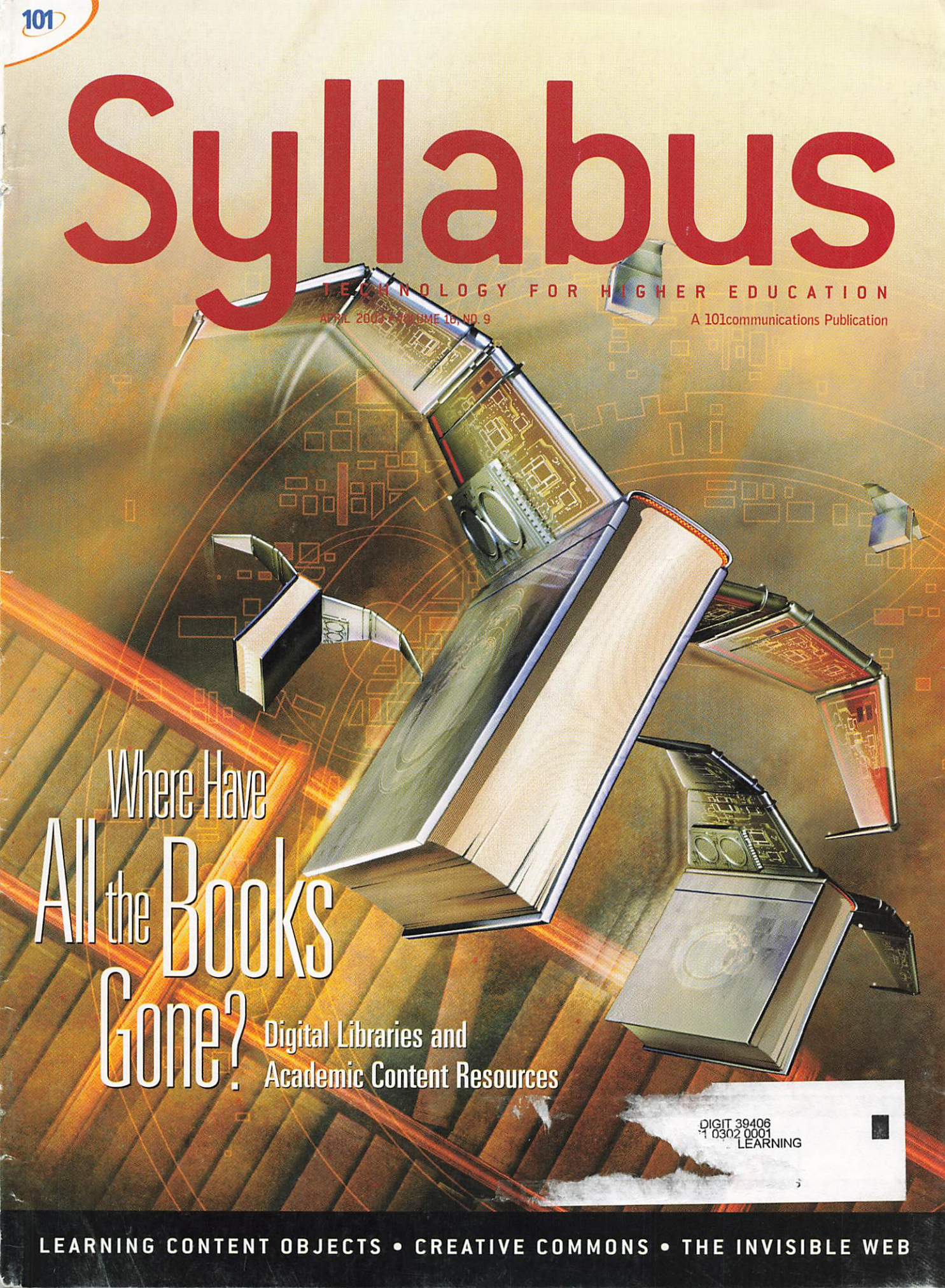

Where Have All the Books Gone?

Digital Libraries and Academic Content Resources

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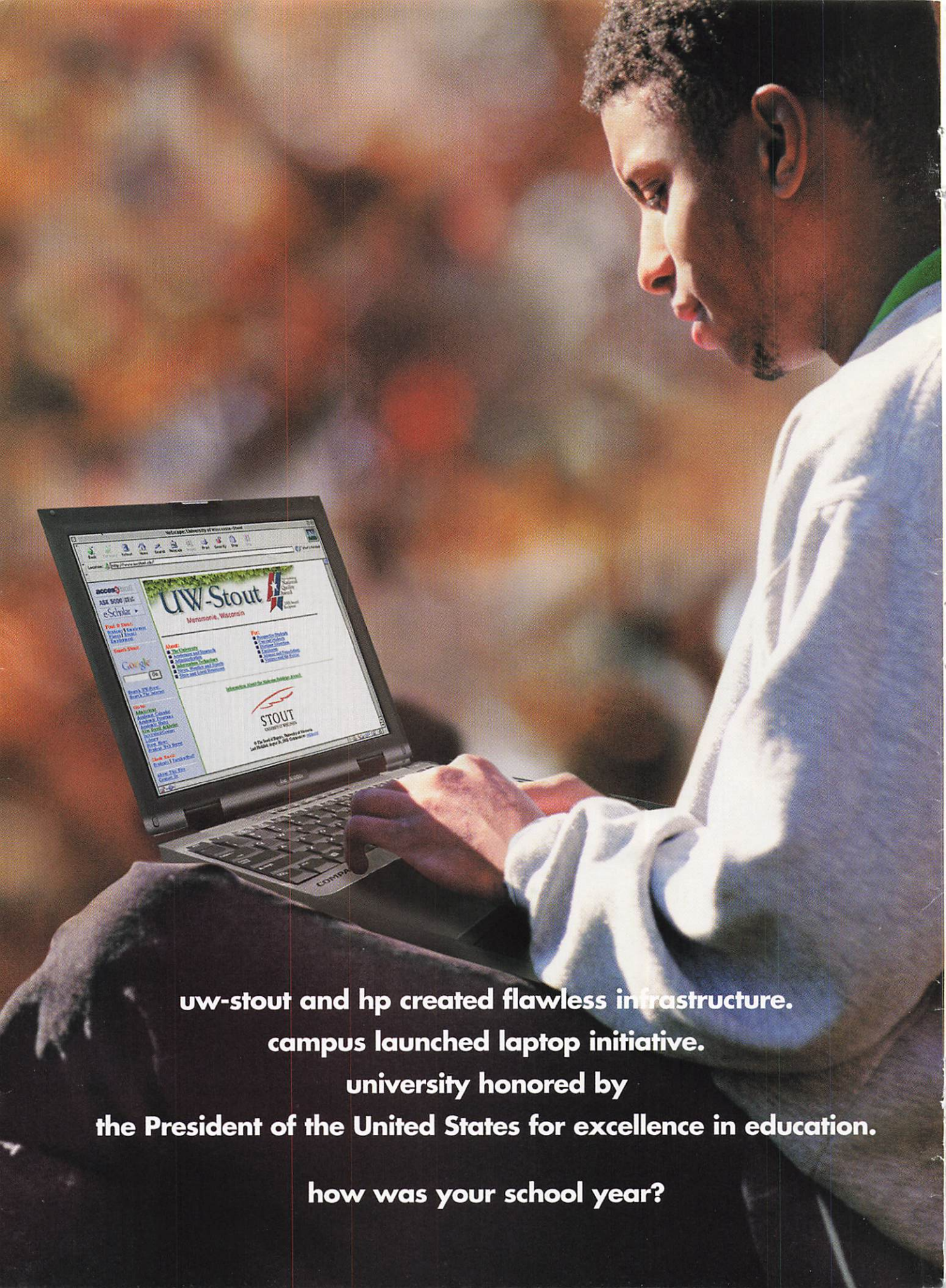

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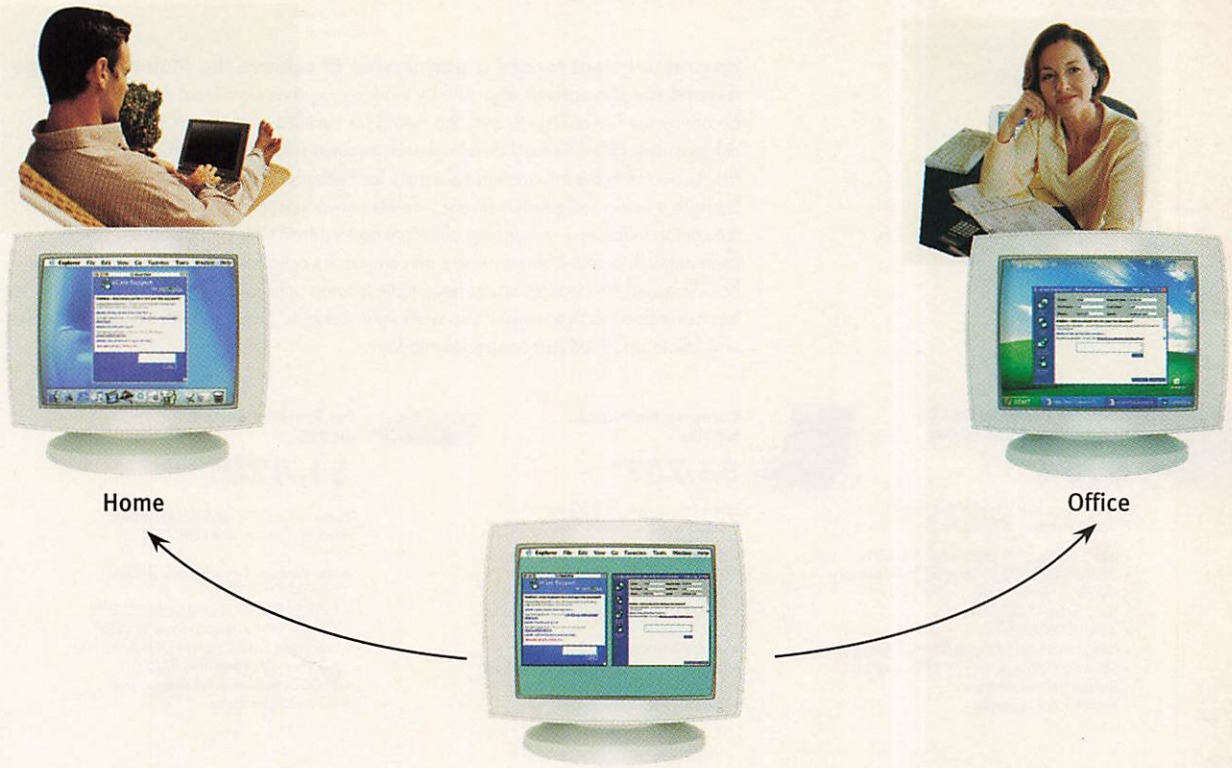

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28 Academic Digital Rights: A Walk on the Creative Commons

Glenn Otis Brown, Creative Commons

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26 Getting in Deep: After Google, the Invisible Web

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28 ePortfolios: A Pocket Full of Ambition

David A. Baird, Southeast Missouri State University

Pocket portfolios—portfolios recorded on digital media that can be carried in a pocket—are becoming increasingly popular, especially among graphics students. David Baird explains how the Technical Graphics faculty at Southeast Missouri State University adopted the pocket portfolio as the format of choice for its graduates.

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SYLLABUS EVENTS Syllabus2003 Tenth Annual Summer Conference Brochure (page 23)

EDITOR'S NOTE

Mary Grush, Editor

Our cover image depicts books soaring on electronic wings. What is the potential of digital libraries and academic content resources? In "Where Did All the Books Go?" (page 12), Steve Epstein tracks the progress of key digital library initiatives, from the Gutenberg Project, an early pioneering effort that is digitizing works on a large scale, to MIT's DSpace, a more recently developed repository system to transform the way scholarship is collected and shared digitally.

Questions about rights for course materials and scholarly works have always been part of the academic scene. But digital formats and collections have raised additional controversy, especially given confusion over definitions of reuse and how to determine or apportion ownership of electronic materials developed collaboratively. And many faculty are motivated to waive or modify rights on behalf of the need to share intellectual property. In such an environment, is there a better way to delineate rights than with traditional copyright? Founders of the Creative Commons project think so. In an article on page 17, Glenn Brown, executive director of the nonprofit organization, considers how Creative Commons licenses can benefit academic authors.

Several others weigh in on the complex issues related to digital academic content resources. Steve Gilbert offers a feature article on how faculty can access and share collections of digital information: "Collections, Convections, and Confections" (page 20). How will you locate the sweetest content to add to your class or support your research? Don't miss Dale Vidmar's tips on searching the "Invisible Web" to find content morsels not normally indexed by Web search engines (page 26).

I'm pleased to welcome two new columnists. Casey Green, perhaps best known as founder of the widely cited Campus Computing Project, will be contributing monthly commentary on issues relevant to higher education technology (see "Digital Tweed," page 24). He extends our discussion of digital rights with his first column, "The Value of Content." And Howard Strauss, Princeton's manager of technology strategy and outreach, now joins us with an endpaper column in each issue (see "Reflections," page 42). This month, Howard rounds out our coverage of digital libraries with an opinion about digital books: "eBooks Haven't Worked—Here's What Might."

How do you keep current with IT news? Considering the glut of IT information pushed out daily in electronic digests and news releases, wouldn't it be nice to have an intelligent filter set for *higher education* IT news? Well, now you have one: Syllabus IT Trends is a convenient e-newsletter for those interested in IT in higher education, compiled and written by higher education professionals. Don't miss an issue! Subscriptions are free. To sign up, visit www.syllabus.com.

I hope you are making plans to attend Syllabus2003, held July 27-31 in San Jose. The tenth anniversary of our annual summer conference will be celebrated with a special day of programming at Stanford University on July 28th. You'll find our conference brochure in the center of this magazine. For conference updates, visit www.syllabus.com or call (800) 280-6218.

Enjoy this issue of *Syllabus!*

Mary Grush

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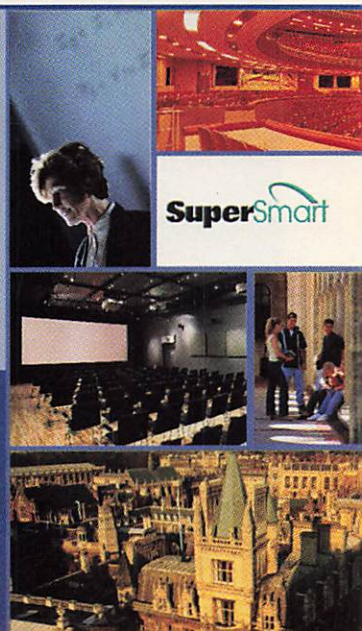

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Phillip D. Long

TRENDS

AN INFORMATION RESOURCE OF INTEREST TO EDUCATORS

Learning Objects in Motion

Instructional designers and educational technologists often talk about the potential for learning objects. Lego-like in their utility, learning objects are the small pedagogical chunks that can be assembled in different ways to provide alternative learning paths through a course topic. Some people present learning objects as the smallest component that has internal meaning for a given course objective. This implies that a learning object has a context associated with one or more "things" that together present a coherent building block toward understanding an idea.

The image of educational Legos is attractive. Whether you're building a bridge, a spaceship, or a speed boat, you can accomplish the task with a selection of Lego building blocks. Building learning modules could be similarly flexible; with one set of blocks any number of shapes, or learning patterns, could be assembled. H. Wayne Hodgins (2000), director of worldwide learning strategies for Autodesk Inc., compares this to the revolutionary impact of early manufacturing inventions. "The power of this dynamic, adaptive, assembling of information is equivalent to Eli Whitney's invention of interchangeable parts," he says. "Information is rendered reusable, interchangeable, durable, accessible, and affordable."

Cisco Systems Inc. applied the ideas for this learning machinery in order to develop the Cisco Systems Reusable Learning Objects (RLO) model. They add a dash of psychology to a "seven plus or minus two" approach to suggest a combination of reusable elements that would support customized learning. In Cisco's view, reusable information objects (RIOs) are aggregated together in groups of seven plus or minus two to form an RLO that can teach a task based on a single learning objective. They add contextual data such as an overview in the beginning and a summary at the end.

The vision is to have a common pool of small, standalone learning "chunks" that can be assembled and re-assembled in different combinations to make topical units of learning "just right." It sounds good. The outcome, in this utopian vision, is learning Legos that are, "reusable, interchangeable, durable, accessible, and affordable."

The challenge has been to identify pragmatically what constitutes a chunk that fits the definition of an RLO. The formal definitions don't offer much help. For instance, the IEEE Learning Object Metadata definition defines a learning object as: "... any entity, digital or non-digital, which can be used, reused, or referenced during technology supported learning ... Examples of Learning Objects include multimedia content, instructional content, learning objectives, instructional software and software tools, and persons, organizations, or events referenced during technology supported learning."

Of course the issue really is in distinguishing what the component is that faculty actually find useful, which they reuse so teaching is made easier, more efficient, and their preparation time shorter. Reigeluth and Nelson (1997) note that faculty typically decompose a learning object into its constituent parts and then rebuild them to suit their own teaching requirements. Their observations point out the importance of granularity in the usefulness of chunks of learning—that is, toward their reusability.

RSS News Reader

If you're an OS-X user, as I am, you should check out the terrific news reader NetNewsWire from Ranchero Software (http://ranchero.com/). It's a great example of an RSS news reader client that culls headlines from a variety of sources to which you can elect to subscribe.

BRIEFS

- The **University of Minnesota-Duluth** moved to an open source electronic portfolio system that will enable individuals or institutions to customize the application at will.
- The **University of Miami** signed an alliance with the Universidad Politecnica de Valencia, one of Spain's leading universities, to do joint research in engineering and information technology.
- **Sun Microsystems Inc.** unveiled education licenses and software discounts totaling $1 billion.
- **The Military Academy at West Point** installed wireless access points across campus, enabling about 450 students to tap a wireless network with notebook computers.
- **EDUCAUSE** extended eligibility for .edu domain names to institutions that provide specialized training in health services, education, technology, and other professions.

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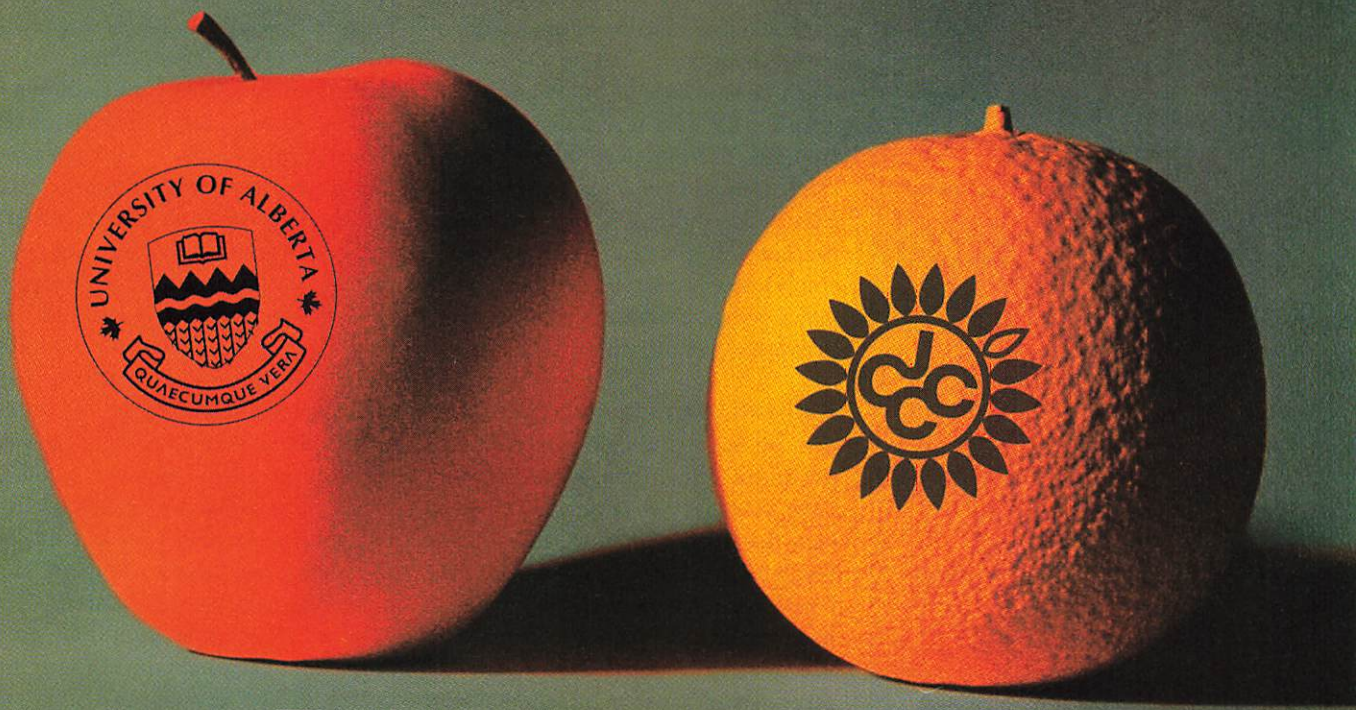

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Trends, *continued from page 8*

Dave Wiley (2000) notes that reusability is a function of granularity of the learning object and its scope—how much or how little to include in it. The granularity of a learning object, he suggests, is influenced by how much effort it takes to manage the metadata that is needed to usefully identify elements incorporated in it. The idea is if you get down to small grains—the individual graphs, charts, pictures—the effort to manage the stuff will be overwhelming.

RSS and Learning Objects

Rich Site Summary, RSS, is a type of XML document primarily used to distribute news and other Web content. It was originally developed at Netscape to feed news headlines and related information to their portal pages. These so-called "channels" have become the primary mechanism by which automatic distribution of news and other event-oriented information bits are enabled, a process known as providing "syndication services."

RSS was intended to be a simple distribution mechanism, originally for text and news headlines with a link to the original article source. To set it up, a content provider creates an XML description of the news that their Web page hosts, including a URL, title, and a summary. They put these on their Web servers so "content aggregators," or service providers, can read them and collect data about that Web site. Harvesting information from multiple sources puts the service provider in a position of offering a rich source of up-to-date news items to any client that seeks to search them.

The majority of RSS headline news sites are providing text-based material, but RSS Web-based resources can also feed audio files, video files, and other multimedia objects. A group of developers in Canada recognized the potential for using this capability. The University of Calgary Campus Alberta Repository of Educational Objects (http://careo.ucalgary.ca) has assembled a repository of content that is open to anyone who wishes to join them. They have also established alliances with MERLOT (www.merlot.org), Netera Alliance (www.netera.ca), Alberta Learning (www.learning. gov.ab.ca), the Belle Project (www.netera.ca/belle/), and CanCore Protocol (www.cancore.ca). In the United States, Maricopa Community College System (www.mcli.dist.maricopa.edu/mlx/feed.php) has been using RSS to syndicate learning objects .

There is much work needed to better link instructional theory, learning application design, and the component elements to present opportunities for learning to students. There are also important questions to confront: How much contextualization can and should be built into a learning object to embed a specific instructional approach within it? Or should such objects be clearly agnostic to the instructional theories that are used to assemble and implement them? How do we determine the right balance?

While we're working on these problems, educational developers are cranking out new applications and learning systems, or re-purposing ideas from other sources to provide us with tools that help make developing teaching materials online easier. Participating in the dialogue is invaluable, and keeping an eye on the horizon is essential.

Phil Long (longpd@mindspring.com) is senior strategist for the Academic Computing Enterprise at MIT. He is also a senior associate for the MLT Group of the AAHE.

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where did all the BOOKS go?

Digital Libraries and Academic Content Resources

In the year 2000, an ad for Qwest Communications had a very weary traveler arriving at an out-of-the-way motel. He asks if they have movies in the rooms. A bored motel clerk captures the dream of the modern communications industry while barely lifting her eyes from the pages of a paperback book: "We have every movie ever made, in every language, any time, night or day," she deadpans to a startled guest.

Qwest is not there yet. But it is not going alone. Joining Qwest are members of several digital federations who are working on an interrelated set of objectives: creating, preserving, sharing, and providing access to digital content in a cost-effective manner.

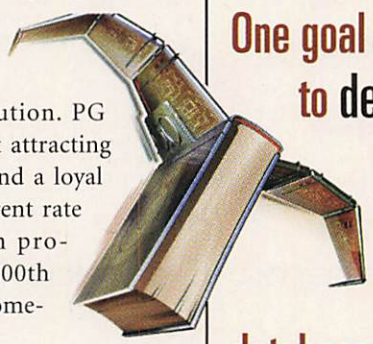
For librarians, the bandwidth issue is but one of the challenges. Members of the Internet2 (www.Internet2.org) project are working with librarians to address issues of data rates. Other problems relate to ways of dealing with information that is licensed and not owned. The librarians want to know that after a license expires there will continue to be access to archives of previously available material.

BY STEVEN L. EPSTEIN

It Began with Gutenberg

Many readers are familiar with some of the early projects designed to open access to content via the World Wide Web. Notable is Project Gutenberg (PG), http://gutenberg.net/, begun by Michael Hart when he received a grant of computer time at the University of Illinois in 1971. He decided that the greatest value created by computers would not be computing, but would be the storage, retrieval, and searching of what was stored in our libraries.

From the first document he typed in, the "Declaration of Independence," the project has grown to over 6,267 full-text electronic books available for free distribution. PG has been successful at attracting worthwhile content and a loyal following. At the current rate of growth, it's been projected that PG's 10,000th book will be added sometime in 2003.



The Gutenberg Project has long attracted gifted programmers and visionaries to its cause. In 1993, World Wide Web founder Tim Berners-Lee pondered how best to get PG's ASCII wares out to the public. Others have written scripts to better handle proofing issues, formatting, FTPing, etc. Recently, Charles Franks has applied technology in a manner that completely redefines the editing process. He has enlisted the help of a loyal army of volunteer proofreaders to help in the effort—one page at a time. Dubbed "Distributed Proofreading in Support of Project Gutenberg" (http://texts01.archive.org/dp/), this project expects to be a major contributor to Hart's effort to have more than one million books available in the Project Gutenberg archive. They post the daily upload count on their Web site and have recently exceeded 5,000 pages proofread and uploaded in one day.

Hart has an ambitious goal. It may seem impossible, but with people like Franks on his side, and a new means by which anybody can help create eBooks by producing even one page per day, it could well happen in the PG founder's lifetime. Fortunately, there are more than 50 mirror sites around the world that will be able to share the load as added content will result in additional searches and downloads.

If You Build it, Will They Come?

With a growing number of sites placing e-content online, John Mark Ockerbloom, a graduate student at Carnegie Mellon University, realized that a key bottleneck to widespread use of the content was the lack of a central "card catalog" that would allow people to find content. He conceived the Online Book Page (OBP), http://onlinebooks. library.upenn.edu/, as a gateway that would not merely be a place where people could get content, but would also be a guide to the vast number of other sites that were providing similar services.

One goal of the DLF is to develop a set of metadata that can be used across databases and facilities.

Now housed at the University of Pennsylvania, the OBP includes links to more than 18,000 books, more than 110 serials, and 300-plus archives of material. The archives are large, general-purpose collections with substantial English-language listings, topical collections, and foreign-language collections.

"We are now at the point where so much information is 'born digital' that it makes sense the libraries provide a way to easily archive and search this information," says Ockerbloom, now a digital architect at the University of Pennsylvania. He recognizes that the issues are many and beyond the scope of any one library to tackle by itself.

Beyond Books and Access

The work of projects, such as PG and the OBP, are only a part of the growing world of the digital library movement. Leaders of the movement not only want to digitize books and serials, but want to make sure information is preserved, easily accessed, and assembled into topical collections across domains. However, much work needs to be done if library systems are to talk with each other and be able to meet the needs of teachers, scholars, and publishers. With goals and challenges like these, it is not surprising that the movement has spread beyond the early adopters to groups of libraries and colleges working collaboratively. The need for a federated approach is understandable when one realizes that the objective is sharing library holdings, as well as the costs of converting, preserving, and providing access.

One of the groups leading the way to the "library of the future" is the Digital Library Federation (DLF). The DLF is a consortium of libraries and agencies that are pioneering the use of electronic information technologies to extend their collections and services. Funded in large part by the government and foundations, the DLF operates through its members to provide leadership for libraries by identifying standards and best practices for digital collections and network access. The organization also helps coordinate research and development in libraries' use of information technology and helps start projects and services that libraries need but cannot develop individually.

Members include the Library of Congress and the National Archives along with 25 university libraries across the country. Other members are the New York Public Library and the California Digital Library. The goal of the DLF is to transform library services and the way libraries handle their patrons, their content providers, and each other.

As the DLF notes on its Web site (http://www.diglib.org/collections.htm): "In the digital library, collections are transformed through the integration of new formats, licensed (as opposed to owned) content, and third-party infor-

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tion over which the library has little no direct curatorial control. Collec- n strategies and practices are not yet y developed to take account of these anging circumstances, nor are their gal, organizational, and business plications fully understood."

As an academic federation, the DLF omotes strategies for developing stainable, scaleable digital collec- ns and encourages the development new collections and collection serv- es. Although it is fairly young, the deration and its members have ready produced a number of Digital brary architectures, systems, and ols that are being used by its embers and affiliates. The synergy is ready producing enhancements to igital collections of members that can e used by the public.

Making Rare Books Accessible

One of the major goals of the DLF is o make available the rare book and rtifact material that can only be ccessed under restricted-use condi- ions. One has only to think of the rare ook room in most university libraries o remember the books held in limate-controlled conditions that had o be read while wearing gloves.

But with the advent of scanning tech- nology, the Internet, and improved ndexing, this material can now be videly distributed. For example: The Digital Imaging and Media Technology nitiative at the University of Illinois (http://images.library.uiuc.edu/) was a oint project between the university and Follett Corp. to digitize historical maps of the state of Illinois. Though containing just 84 records, the collection shows North America, the Northwest Territory, the state of Illinois, and coun- ies and townships within the state. Maps range in time from 1650 to 1994. A thumbnail image and a full indexing record are included for each image. The thumbnail image can be enlarged for better viewing. All the maps used in the project are from the Map and Geography Library and the Rare Book and Special Collections Library at the University of Illinois-Urbana-Champaign, surely not a place to which many people have access. However, thanks to digital technology, we all do.

It is one thing to digitize text and images and make them "public" if they sit as HTML pages that can be easily seen by standard search engines. It is another to determine a way to see content housed in databases and formed into pages only when retrieved. The larger issue is how you find the material if a "collection" might exist in multiple databases that are housed in physically separate facilities. One goal of the DLF is to develop a set of metadata that can be used across databases and facilities.

An implementation of this approach by the University of Michigan, called OAIster (http://oaister.umdl.umich.edu/o/oaister/), uses The Open Archives Initiative Protocol for Metadata Harvesting (www.openarchives.org/OAI/2.0/openarchivesprotocol.htm) to create a collection of "freely available, difficult-to-access, academically oriented digital resources." It currently searches more than one million records from 144 institutions.

One goal of the project was to be able to find items that are "hidden" from view. The project finds that: "Digital resources are often hidden from the public because a Web search using a search engine like Google or AltaVista won't be picking up information about these resources. Robots in use by such search services don't delve into the CGI [Common Gateway Interface] that ports this resource information to the Web. Consequently, these resources are generally accessible only to those who know to look in digital library repositories, generally at universities who are developing the collections in these repositories."

A New Publishing Model

Another issue facing the DLF is the authorship, peer review, and commercialization of content. Most academic content originates from the mind of a professor and goes to a computer screen. It then moves to peer review among other professors and is finally published in an academic journal. As such, it is sold back to the academy in the form of an individual or institutional subscription. Academics are asking the question, "Who needs publishers if we can self publish and distribute ourselves?" The thought is, if the content starts out on computer screens owned by the colleges and it gets consumed on the computer screens owned by the colleges, what value does a "publisher" add?

One project that will provide some muscle for librarians as they deal with the publishing industry is the DSpace repository system developed by MIT and Hewlett-Packard Co. DSpace (www.dspace.org) is an open source software platform that enables institutions to capture and describe digital works using a submission workflow module. It also distributes an institution's digital works over the Internet through a search and retrieval system and preserves digital works over the long term.

According to MacKenzie Smith, project director of DSpace, the project will allow faculty members to pool findings and share everything, from articles, technical reports, conference papers, data sets, and databases, to media clips, visual aids, and simulations used in class. Moreover, she says the project will, "transform the way in which content is made available. MIT libraries seek to make significant progress in the development of scholarly communication and the scholarly record."

Already proven at MIT, DSpace has formed its own federation and is providing the open source software to others. As a critical mass of professors create and post content that can be easily retrieved by their colleagues, the academy will keep looking at the possibility of disintermediating the publisher from the process. The transformation of the archives is underway; the stacks will never look the same.

Steven Epstein (epsteis@ncc.edu) *is a former professor of communication and education at Columbia University, a higher education consultant for IBM Corp., and vice president of multimedia and distance learning at Simon and Schuster. He currently is on the communications faculty at Nassau Community College.*

Academic Digital Rights:

A Walk on the Creative Commons

By Glenn Otis Brown

In the face of ever longer and stronger copyright laws, Creative Commons has launched a suite of licenses—its first project of many—to help recreate a healthy public domain.

In principle, copyright is a spectrum. It grants authors an array of discrete, fine-grained powers: the rights to copy, redistribute, commercially exploit, or build upon an authored work, among others. Each right can be exercised individually and enforced more or less than any other, depending on the author's preferences.

In practice, however, copyright tends toward monochrome: It applies automatically and fully to all works the moment they're made, regardless of the author's aims. To deviate from this "all rights reserved" default usually requires the help of skilled (and often expensive) lawyers.

For many large media companies—for and by whom copyright law is largely written—this automatic, full-bore copyright default might make sense. But for the rest of us, who author the great bulk of our society's culture, it can be a clumsy, even counterintuitive tool. In academia, in particular, the timeless ethos of collaboration has been electrified by the Internet in recent years, and scholarly authors have

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long recognized that enforcing every last one of their rights to the hilt may in fact impede their main aim: the spread of information.

Preferring to Share

Creative Commons is a nonprofit corporation founded on this notion—that some people prefer to share their works on more generous terms than standard copyright provides. Our goal is to offer such authors an easy and clear way to announce these preferences. And, in time, to cultivate a large body of material, whether owned or public domain, that is free for certain uses—and clearly marked as such, so that the world knows its status up front. The idea is to expand access to high-quality content online while reducing the legal friction and doubt of living with copyright every day.

Our first project toward this end is our suite of Creative Commons licenses, launched in December 2002. Each license allows an author to retain his or her copyright while allowing certain uses of his or her work—on certain conditions—to declare "some rights reserved." The licenses, which are available at no charge, allow the world to copy or redistribute covered works provided certain terms of the author's choosing are met. Authors can come to our site and, from an intuitive menu, choose the combination of conditions that best reflects their preferences (see "Some Rights Reserved").

The licensing project is, in many respects, modest in aim. Creative Commons does not seek to change the current laws or reform the copyright system, and in no sense are the licenses a panacea for the complex problems facing authors and publishers in the online world. Rather, we simply want to provide authors tools that will help them live a little better under that system as it stands today. Our approach is strictly voluntary and depends to a great degree on the participation of our community of users. And our fundamental mission is simply to help crystallize the norms for sharing already thriving in many online communities.

Creative Commons aims to help create a system of reasonable, flexible copyright that works in parallel and in harmony with full, commercial copyright.

A Three-Layer Approach

Why bother with a Creative Commons license, if some healthy exchange is already happening? The answers to this question begin to reveal the licensing project's more ambitious side. First, Creative Commons licenses are top-notch form legal documents. With the pro bono assistance of the Silicon Valley firms Cooley Godward and Wilson Sonsini Goodrich & Rosati, the legal and technical expertise of our board of directors, and a rigorous and open peer-review process, we spent several months chiseling the licenses into their current form. Second, the Creative Commons Web interface lets you mix-and-match the conditions and permissions you'd like to express, providing a degree of flexibility contemplated by copyright law, but today exercised only by those with access to copyright experts.

Third, every Creative Commons license comes expressed in three distinct ways, each with its own advantages. There is the human-readable version ("Commons Deed"): a simple summary of the license terms in plain language and intuitive icons. The lawyer-readable version ("Legal Code"): the legal nitty-gritty written in the parlance of courts and their officers. And the machine-readable version ("Digital Code"): a translation of the key license terms into a "metadata" language that browsers and other computer applications can use to search for and sort works based on their terms of use. This three-layer approach allows for a combined ease-of-use, legitimacy, and practical utility that is very tough to achieve otherwise.

Finally, as the licenses grow in popularity (licensors now number in the tens of thousands), they will grow in value. Like any kind of standard, the licenses' benefits will build as the community of users grows, as our language of rights and permissions gains currency, and as our metadata becomes a technical lingua franca.

This standardization is particularly appealing in light of the growing number of distance learning and online education projects blooming every day. Creative Commons licenses and metadata, once widely adopted, will allow these otherwise separate communities to harmonize their copyright policies and thus encourage the sharing of information across specific contexts or cohorts.

Open Inspiration

Though standardization is a core Creative Commons goal, we don't plan to reach it by being control freaks. We actively solicit feedback on ways to improve the licenses and metadata and plan to incorporate these suggestions into future versions of our tools. In this sense, the open source and free software movements have been our inspiration in both substance and form—we articulate open principles through open means.

It was just this spirit of community—as well as the practical desire to simplify the clearance of rights—that led Rice University's Connexions Project and MIT's OpenCourseWare to become early Creative Commons adopters. The two programs' experiences with the licenses thus far also hint at the ways institutions and authors alike might benefit from the Creative Commons approach. With OpenCourseWare, MIT holds the copyright in its published course materials, which it makes available to the world on its Web site under a Creative Commons license (http://ocw.mit.edu/). The Connexions project requires contributors to its educational repository to release their materials with a Creative Commons license, and those contributors themselves retain the copyrights. The licenses then serve as a type of legal lubricant for Connexions' course composer, a tool that allows educators to build teaching materials from the repository—without the hassle of clearing rights every step of the way, because the rights have been cleared in advance. In addition to these institutional and quasi-institutional uses, the licenses should prove particularly helpful for self-submitted collections and independent, faculty-run publications with limited legal budgets.

All of these practical considerations aside, Creative Commons licenses are also powerful tools of civic expression. They are one of the very few ways for an ordinary citizen of the Web to take some sort of action in the realm of copyright policy. Taking one's grievances to Congress and the courts can be a long, expensive road. Using a Creative Commons license is not only a way to opt into a system of more moderate copyright, it's also a way of raising your hand and saying, "I believe in another way," then taking action. There are almost no other outlets for such creative civil obedience in the world of copyright today.

Releasing the Full Spectrum

The licensing project is just the first of Creative Commons' many projects to help recreate a healthy public domain in the face of ever longer and stronger copyright laws. This winter also saw the launch of the Founders' Copyright, under which publishers and copyright holders can choose to dedicate their works to the public domain after a 14-year period with an option of renewing for another 14 years—just as America's first copyright law, in 1790, would have had it. (O'Reilly and Associates, a popular commercial publisher of software handbooks and commentary, became the first Founders' Copyright adopter in December 2002.) In the works is the Creative Commons Conservancy, a sort of land trust for intellectual works, where we will make copyrights of particular public value (software protocols and standards, for example) widely available on liberal terms while protecting against exploitative or "polluting" uses.

Through these various projects runs a common(s) theme that further hints at the organization's larger aspirations. Creative Commons aims to use tools of private law and business—contracts and copyright—to help create a public good: a system of reasonable, flexible copyright that works in parallel and in harmony with full, commercial copyright. We want to be the prism that releases the full spectrum of copyright to the people it was originally intended to help: authors and the citizens they enlighten.

Glenn Brown (glenn@creativecommons.org) is the executive director of Creative Commons.

Creative Commons

Creative Commons is the collaborative effort of practitioners and theorists of law and technology to bridge the world of copyright and the public domain. The nonprofit corporation is supported by grants from The Center for the Public Domain and The John D. and Catherine T. MacArthur Foundation. It is housed at Stanford Law School, where it shares space, staff, and inspiration with the Stanford Law School Center for Internet and Society.

For more information, to find out how to obtain licenses, or to view a short video about Creative Commons, visit: http://creativecommons.org.

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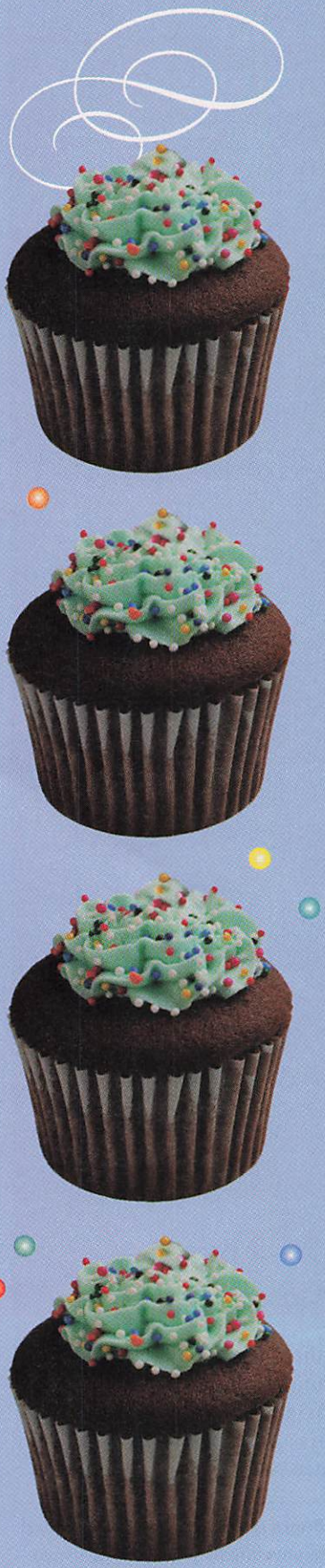

Collections, &

Steven W. Gilbert

Every once in a while a faculty member discovers the perfect fit—an instructional module on the Web that fulfills the teaching or learning needs that inspired the search. These matches are like getting just the kind of confection you wanted from a new box of chocolates.

The experience of these occasional successes raises expectations about the Web. But searching alone is more like playing a well-programmed slot machine than working your way through the box of chocolates—even if you're allowed to touch them and put back the ones you don't want. Slot machines are purposely rigged in favor of the house. The Web is a different kind of challenge.

The Heat is On

Perhaps a few years ago we could believe that information about the "really good stuff" on the Web would be passed along effectively and naturally the way heat from a burner evenly fills an oven. When there were only a few educators using the Internet, the number of resources and volume of e-mail were small enough to rely on a kind of convection process. However, now we don't have the luxury of simplicity—there are too many choices and too much information. We can't keep the oven closed—we can't even control the heat.

As a result, many bright people and respected organizations are trying to bring order to this chaos. They are developing well-organized sets of learning objects, systems of categorizing instructional modules, and ways of applying processes like peer review to provide better evaluative informa-

Connections, and Confections

tion. These emerging collections help, but alone cannot solve the underlying problems.

The underlying problems may even be getting worse. Expectations continue to rise for what can be done to engage faculty and students in using information technology to improve teaching and learning. Also, resources available to support this kind of change are being reduced as many colleges and universities are pressed to cut budgets more painfully than any time in the 1990s.

Most educators are now recognizing a growing flood of new instructional options based on using computers and the Internet. These options include not only changes in the underlying content for courses, but also new ways of finding, organizing, presenting, accessing, comparing, and exchanging information.

New Kinds, Change of Pace

Faculty and academic support professionals have been badly prepared for the rising expectations and proliferating options they now face. Educators have had decades to adjust to accelerating change in many academic fields while instructional changes proceed at a glacial pace. Changes in subject matter have happened much more rapidly, frequently, and widely than changes in the processes of teaching and learning—until the 1990s.

Most faculty in higher education have been well-prepared to deal with new ideas about organizing subject matter—integrating new approaches about a subject or re-organizing content based on new educational goals. However, most faculty have been prepared for few, if any, different ways of teaching and learning. And that is what they now are urged to embrace in a confusing array of poorly organized new choices.

Playing Catch Up

Many educators would like to halt the development of instructional resources, or at least hold back information about new instructional options while they catch up with what is already available. But the impact of rapid technology obsolescence and the all-too-human desire to discover new tools ensures a continuous stream of new instructional options. What's more, competition among publishers and academics eliminates the possibility of a moratorium on new instructional materials, making it almost impossible to develop standards for building these items.

In fact, efforts to develop standards (e.g., metatext) for instructional objects can be helpful both to resource developers and users. However, the process of developing standards is so much slower than the current pace of innovation that such standards may function more realistically as a set of guidelines. In addition, because most higher education faculty have no formal training in pedagogy or instructional design, it is doubly difficult to provide a taxonomy of instructional resources that can be directly useful to faculty and most academic support professionals.

Selected Collections, Repositories, and Related Resources

Collections and Repositories

Educational Resources Information Center (ERIC)
www.eric.ed.gov/resources/resources.html
"... largest education database in the world—containing more than one million records of journal articles, research reports, curriculum and teaching guides, conference papers, and books."

University of Wisconsin-Milwaukee's Center for International Education
www.uwm.edu/Dept/CIE/AOP/LO_collections.html
A collection of links to "learning objects collections," related organizations, a bibliography, etc.

National Science Digital Library
http://nsdl.org
"The comprehensive source for science, technology, engineering and mathematics education. Funded by the National Science Foundation."

Project Kaleidoscope (PKAL)
www.pkal.org/index.cfm
"... an informal national alliance working to build strong learning environments for undergraduate students in mathematics, engineering and the various fields of science."

Resources for Chemistry Educators
www.sfu.ca/chemcai/index.htm
"This site provides annotated Web links to instructional materials and other resources of interest to Chemistry teachers and course designers ... Special emphasis is placed on CAI lessons, digital text, Web-based tutorials and similar materials that can serve as alternatives to traditional methods of instruction."

Instructional Resources

MERLOT www.merlot.org/Home.po
A free and open resource designed primarily for faculty and students of higher education.

CAREO www.careo.org
A project supported by Alberta Learning and CANARIE that has as its primary goal the creation of a searchable, Web-based collection of multidisciplinary teaching materials for educators across the province and beyond.

Maricopa Center for Learning and Instruction www.mcli.dist.maricopa.edu/
Lots of resources organized for (but not limited to) faculty and students of Maricopa Community Colleges.

EDUCAUSE www.educause.edu/asp/doclib/subject_docs.asp?Term_ID=606
EDUCUASE offers a set of items from its publications and other sources on the subject of "learning objects."

XanEdu www.xanedu.com
The digital and print publishing services for faculty—in fact, a collection of publications intended to be used as part of digital coursepacks.

TLT Group www.tltgroup.org/OpenSource/Base.htm
Offers an introductory selection of many links to "Open Source" or "Open Course" collections of instruction-related resources.

No Self-Service

Unfortunately, none of the new collections can yet operate with the ease of, say, a self-service gas pump. Even the best instructional resource collections are not devices that can be learned in a few minutes. They are also not devices that provide a simple, faster direct replacement for a well-defined service that its users were already accustomed to depending on.

No matter how hard the builders of the collections work, only a small minority of faculty are likely to be able to use these resources without assistance. As budgets get squeezed, more faculty members and academic support professionals bear increased responsibility and often accountability. Their discretionary time is reduced and more precious. Only 10 percent or 15 percent of the faculty who are deeply committed to instructional innovation are likely to take the time to learn how to use these collections effectively. And most faculty aren't really sure what they might find will be directly useful to them, or that they will have the time, self-confidence, and skills to master new ways of teaching and learning.

Lifelong Learning

How can the connections between individual faculty members and the right "confections" be made more easily, cost-effectively, and frequently? By improving every part of the currently messy and primitive structure. Better collections; more widely understandable and useable taxonomies of instructional options; improved ability to assemble and distribute customized sub-collections; better support services; better training and professional development for everyone.

But perhaps most important is the recognition that the idea of "lifelong learning" is for everyone. The structural implications are profound.

Steven Gilbert (gilbert@tltgroup.org) is President of the TLT Group and moderates the Internet listserv TLT-SWG.

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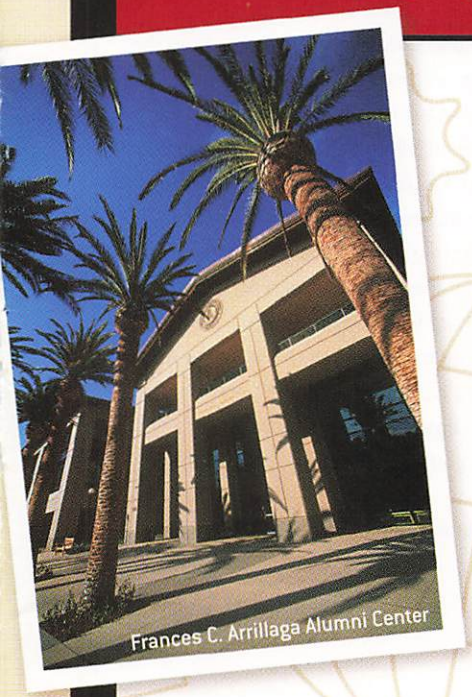

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I'm pleased to introduce our 10th annual summer conference, Syllabus2003.

The conference has evolved over the years, from a small gathering of instructors experimenting with multimedia and the Internet, to a comprehensive education technology conference and exposition that now includes faculty, administrators, and IT professionals representative of the wide range of technology users on today's higher education campuses.

Along the way, we've witnessed tremendous progress and innovation on college and university campuses, from the creation of individual Web course pages to virtual universities and fully online degree programs.

We hope this year's event will spark creativity and collaboration on your campus. I believe it's our most exciting, comprehensive conference to date. Spanning five days, the program includes four top-notch keynotes and more than 100 breakout presentations, panels, seminars, and poster sessions. Five new tracks embrace key areas of education technology and cover a broad spectrum of topics. You'll be able to explore new technologies and tools, hear examples of implementation strategies specific to higher education, and consider the emerging trends that may bring the next wave of change.

Stanford University is this year's academic host campus, and we're very excited about the special day of programming and exploration at Stanford that is included in your registration. See page 11 of this brochure for details on this full-day event.

Despite its exponential growth since 1994, the Syllabus conference remains true to its original mission—to be a meeting place for education professionals who are dedicated to making technology work, and work well, on their campuses. Besides the opportunity for Q&A during scheduled sessions, you'll find time to speak informally with presenters and attendees during breaks, luncheons, and receptions. We know that you'll like meeting and exchanging ideas with colleagues.

Please enjoy this brochure. And for the latest conference updates, visit www.syllabus.com or call 1.800.280.6218 with questions.

I hope to see you in July!

Mary Grush

Mary Grush
Editor and Conference Program Director

Syllabus Overview

Syllabus Conferences are tailored to the needs of faculty, administrators and IT professionals in higher education. The focus is on technologies of strategic interest to the mission of higher education, whether in the classroom or campuswide. Each conference provides a collegial environment in which attendees can exchange experiences and network with other attendees, as well as discover the latest in technology products, services and applications. All computer platforms, software types, presentation devices, quantitative tools and technologies are explored. Keynote speakers, presenters and panel members are technology leaders in higher education and reflect the editorial integrity and superior content of *Syllabus* magazine.

Syllabus2003 Conference Program Advisory Board

Judith V. Boettcher, Ph.D., Designing for Learning (Chairperson)

Jacqueline Brown, University of Washington

Lois Brooks, Stanford University

Kathy Christoph, University of Wisconsin-Madison

Phillip D. Long, Ph.D., MIT

William H. Riffee, Ph.D., University of Florida

Frank Tansey, CaliforniaColleges.edu

Top Reasons To Attend

- **Peer-to-Peer Learning**
  Breakout, panel and poster sessions at Syllabus2003 are developed and presented by your peers—faculty, administrators and IT professionals who are passionate about the role that technology can play in the delivery and management of higher education.
- **Networking**
  You are not alone! Syllabus2003 is a community where you have access to hundreds of highly-motivated education professionals from large universities to small community colleges, from across the country and around the world. It's your chance to add new contacts to your collegial network.
- **Best Practices**
  Many of the presentations at the conference demonstrate campus technology innovations that have been successfully implemented. So you benefit from a week-long virtual case study lab—information sure to generate new ideas you can use right away.
- **Industry Trends**
  What's next and why? Conference keynotes and expert panels give you a chance to interact with and gain insight from campus technology leaders and visionaries. You'll get the future perspective you need to act wisely.
- **Stanford Day**
  This one day alone is reason enough to put Syllabus2003 on your professional development "must do" list. Through tours, presentations and classroom instruction, you'll get an insider's look at Stanford University's efforts in innovative learning technologies, emerging modes of teaching, collaborative computing environments and distance learning technologies.
- **Collegial Environment**
  The Syllabus conference model is unlike other events where the pace is hectic and the interpersonal opportunities are few and far between. That's why so many of our attendees return year after year. They enjoy the collegial atmosphere and appreciate the easy access to presenters and vendor representatives.
- **Hands-on IT Solutions**
  The Syllabus2003 exhibit hall is a valuable complement to the conference program. Here is where you'll find top vendors eager to help you find the best practical solutions to your IT challenges.

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Who Should Attend

Syllabus2003 offers keynotes, general session panels, breakout sessions, poster sessions, vendor access and networking activities geared to a broad spectrum of higher education professionals:

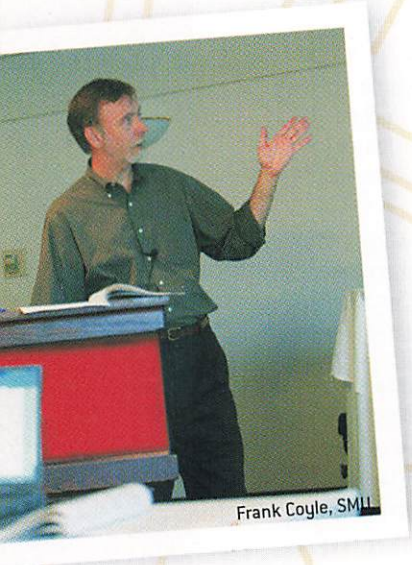
- CIOs, Provosts, VPs, and IT directors involved in strategic and enterprise-level technology decision making
- Directors of academic computing who want to implement systems that will foster the highest academic standards and practices
- IT professionals who must maintain mission-critical applications on campus
- Heads of administrative computing departments who provide key information services throughout the campus
- Faculty who want to take advantage of the latest technology for teaching and learning
- Department chairs interested in providing faculty development opportunities

Conference Tracks & Presenters

WWW.SYLLABUS.COM

The Syllabus2003 program offers up best practices and innovative solutions for faculty, administrators and technology professionals charged with making technology work at higher education institutions. The presenters — professionals facing challenges everyday — come to the Syllabus Conference prepared to share their experiences with their colleagues.

Breakout and panel sessions are being presented in five exciting, new tracks aligned with today's most important campus technology issues.


Frank Coyle, SMIL

New Technologies & Trends

From handheld computers, to tablet PCs, ePortfolios, and new high-tech tools for instruction, this track samples the new and emerging technologies and applications that are sure to make a difference in the development and delivery of education.

Presenters in this track include:

Gerald L. Boerner - Azusa Pacific University (W6)

Charles Brindis - University of Pittsburgh (W1)

Helen Chen, Ph.D. - Stanford University (T6)

R. David Clark, Ph.D. - University of Nebraska at Kearney (W1)

Nancy Cross - Washington University (Th1)

Steven L. Epstein, Ph.D. - Nassau Community College (T1)

Cynthia Goode - Vanderbilt University (T6)

Toru Iiyoshi, Ph.D - Carnegie Mellon University (T6)

Brian Klaas - Johns Hopkins (W11)

Cyprien Lomas - University of British Columbia (T11)

Kim Middleton - Washington College (Th1)

John Murray - Stanford University (T1)

Matthew Nickerson - Southern Utah University (W11)

Pamela Pears, Ph.D. - Washington College (Th1)

Theresa Posani - Baylor University (W1)

Jon Paul Potts - MIT Open Courseware (M1)

Ulrich Rauch, Ph.D. - University of British Columbia (T11)

Andrew Stricker, Ph.D. - Vanderbilt University (T6)

Eric Tao, Ph.D. - California State University-Monterey Bay (W6)

Nigel Ward, Ph.D. - University of Texas at El Paso (T1)

Interactive Media

Today's interactive media are allowing educators the flexibility to offer new modes of teaching and collaborative learning. See how these technologies are being used in the classroom, the lab, and for distance education, and learn more about the enabling technologies and standards like SMIL and XML that help to make it all possible.

Presenters in this track include:

Maury Bousson - Des Moines University (T7)

Frank Coyle, Ph.D. - Southern Methodist University (T2)

Myron Feinstein, Ph.D. - Mercy College (W7)

Denise Freeman, D.P. M. - Des Moines University Osteopathic Medical Center (T7)

Harol Hoffman, Ph.D. - LAAPhysics Project (W2)

Charles Kerns - Stanford University (M2)

Gerald Meisner, Ph.D. - LAAPhysics Project (W2)

Taha Mzoughi, Ph.D. - Mississippi State University (T7)(Th2)

Mary Niedringhaus - Washington University School of Medicine (W2)

Angel Rodriguez - Broward Community College (W2)

Howie Southworth - The George Washington University (T12)

Anna Story - Mercy College (W7)

Shirley Walrod, Ph.D. - Des Moines University (T7)

Olivia Williamson - Stanford University (M2)

Steven Wolf, Ph.D. - California State University-Stanislaus (W12)

Robert Wyatt, Ph.D. - Western Kentucky University (W2)

IT Implementation & Support

Evaluation and support strategies are central to the success of ePortfolio initiatives, distance learning programs, and other implementations of technology on campus. Find out what institutions are doing to support faculty development, evaluate technology programs, provide help desk services, and offer resources for technology integration.

Presenters in this track include:

Richard Baraniuk, Ph.D. - Rice University (T3)

Mary Jane Clerkin - Berkeley College (W3)

Agnes Figueroa - Bellevue Community College (W8)

Julanna Gilbert, Ph.D. - University of Denver (M3)

Michael Giordano - University of New Hampshire (W3)

Geneva Henry - Rice University (T3)

Katherine Kuhns - Stanford University (T13)

Marilee Marchelya - University of Chicago Learning Technology Group (T8)

Robert Marques - University of Chicago Learning Technology Group (T8)

Jason Morningstar - Duke Center for Instructional Technology (W13)

Dima Protchenko - Bellevue Community College (W8)

Paul Ross - University of Denver (M3)

Jeff Rutenbeck, Ph.D. - University of Denver (M3)

Ken Sadowski - University of Chicago Chalk Group (T8)

Reinhold Steinbeck - Stanford University Center for Innovations in Learning (T13)

Robert Stephenson, Ph.D. - Wayne State University (T3)

Sheila Summers-Thompson, Ph.D. - University of Denver (M3)

Dorai Thodla - iMorp, Inc. (T3)

Isbel Trejo - Bellevue Community College (W8)

Laurel Warren Trufant, Ph.D. - University of New Hampshire (W3)

Strategic Planning/ Administrative Issues

Strategic planning may involve a myriad of challenges, from infrastructure issues, to accreditation of distance learning programs, to section 508 compliance. Concerns may include how to determine return on technology investment, or how to leverage technology to benefit large non-major sections.

Presenters in this track include:

Michael Burke, Ph.D. - University of Tennessee (T14)

Kathleen Cercone - Stanford University (W9)

Shane Colter - University of Tennessee (T14)

Philip DiSalvio, Ed.D. - SetonWorldWide and Seton Hall University (W14)

Anne Fein - Landmark College (W9)

Melanie Hounshell - Indiana Institute on Disability and Community, Indiana University, Bloomington (W4)

Marilyn Irwin - Indiana Institute on Disability and Community, Indiana University, Bloomington (W4)

Donald Moscato, Ph.D. - Hagan School of Business, Iona College (Th4)

Andrea Nixon, Ph.D. - Carleton College (T9)

Jerry Riehl - University of Tennessee (T14)

Evan T. Robinson, Ph.D. - Shenandoah University School of Pharmacy (M4)

Michael Rodgers, Ph.D. - Southeast Missouri State University (T4)

Carol Smith - Depauw University (T9)

David Starrett, Ph.D. - Southeast Missouri State University (T4)

Alex Wirth-Cauchon, Ph.D. - Midwest Instructional Technology Center (T9)

Teaching with Technology

This track offers a faculty view of the intersection of technology and pedagogy. Join colleagues as they present case studies in their disciplines and explore relevant topics, including instructional design standards, academic integrity, technology and student learning, and more.

Presenters in this track include:

Rebecca Alm - MCAD Distance Learning (T15)

Linda Bruce - Johns HopkinUniversity (M5)

Patricia Elder Cearley, Ed.D. - South Plains College (W10)

Lindsey Hamlin - Florida Atlantic University (W10)

Kathleen Heideman - MCAD Distance Learning (T15)

Dan Lim, Ph.D. - University of Minnesota, Crookston (T5)

Brian Miller, Ed.D. - University of Delaware (T5)

Jonathan Mott, Ph.D. - Stanford University (W5)

G. David Peters - Indiana University School of Music at IUPUI (T10)

Fred Rees - Indiana University School of Music at IUPUI (T10)

Ann Rucinski - University of Delaware (W5)

Jorge Ruiz - University of Miami School of Medicine (Th5)

William Ryan - Florida Atlantic University (W10)

Justin Schakelman - University of Delaware (W5)

Elayne Shields, Ed.D. - Fort Hays State University (W15)

Michael Smith - Stein Gerontological Institute (Th5)

To register by phone call:
1.800.280.6218 (8:00am - 5:00pm PST)

To register online:
www.syllabus.com/summer2003

For complete program details and updates, please refer to www.syllabus.com.
Presenters subject to change.

Conference-at-a-Glance
San Jose Marriott & Stanford University • July 27 - 31, 2003

Syllabus 2003

Sunday, July 27, 2003 • Full & Half-Day Seminars (see page 10)

9:30am - 12:30pm	S1 Instructional Design in the Web Space: Issues and Strategies	S2 Building a New Media Curriculum on a Liberal Arts Foundation	S3 The Design and Programming of Interactive 3D for Educators	S4 A Systems Planning Approach to Faculty Development	S5 Entrepreneurship, eLearning, and Higher Education: Taking Calculated Risks
1:30 - 4:30pm			S6 XML – An Emerging Technology for Education	S7 Selecting Wireless Technologies for the Classroom	S8 Increasing Institutional Productivity with a Technology-Enabled Faculty
12:30 - 1:30pm	Lunch Break				

Monday, July 28, 2003

8:30 - 9:30am	Opening Keynote: "High Performance Learning Environments: Dreams and Developments"—Roy Pea, Ph.D., Stanford University
9:30 - 10:00am	Buses to Stanford University - 9:35am, 9:45am, 10:00am
	A Special Day at Stanford University
10:45 - 11:45am	General Session: "Choices and Challenges: Lessons Learned in the Evolution of Online Education"—Andy DiPaolo, Ed.D., Stanford University
11.45 am - 1:00pm	Lunch in Dohrman Grove
1:15 - 4:00pm	Concurrent Events in Rotation at Stanford University (See page 11 for details)
4:15 - 5:30pm	Panel: "Innovative Learning Spaces—A New Frontier?"— Moderator: Phillip D. Long , Ph.D., MIT
4:00 - 6:00pm	Buses return to San Jose Marriott - 4:00pm, 5:30pm, 5:45pm, 6:00pm

Tuesday, July 29, 2003

8:30 - 9:45am	Keynote: "The Virtue of Disorder: Sloppiness, Serendipity, and Openness in Educational Materials"—James Boyle, Duke University				
Breakout Tracks	New Technologies & Trends	Interactive Media	IT Implementation and Support	Strategic Planning/ Administrative Issues	Teaching with Technology
10:00 - 11:30am	T1 High-Tech Tools for Instruction - Panel Session	T2 Ready, Set, SMILe: Using SMIL to Build Sophisticated Multimedia Presentations	T3 Learning Objects and Open Resources - Panel Session	T4 Strategic Planning for Return on Investment	T5 Technology and Student Learning - Panel Session
11:30am - 12:30pm	Posters Sessions in Exhibit Hall				
2:00 - 3:00pm	T6 ePortfolios	T7 Simulations and Virtual Reality Applications - Panel Session	T8 Seeing the Whole Elephant: Learning Technology Group	T9 Cross-Institutional Degree Planning	T10 Videoconferencing/ Music Programs

3:15 - 4:15pm	T11 Tablet PCs - Panel Session	T12 Web Design: Nonverbal Communication	T13 Evaluating a Distance Learning Implementation	T14 Evaluating BioWebQuest: Inquiry Learning in the Biology Sequence for Non-science Majors	T15 Teaching Studio Courses Online
4:30 - 5:30pm	Panel: "Pedagogical and Fiscal Planning for Successful Distance Learning Programs"—Moderator: William H. Riffee, Ph.D., University of Florida				
11:30am - 2:00pm	Exhibit Hall Open Delegate Lunch in Exhibit Hall				
5:30 - 7:00pm	Exhibit Hall Reception - Exhibit Hall Open				
Wednesday, July 30, 2003					
8:30 - 9:45am	Keynote: "Integrative Design: Revisioning Educational Infrastructure"—Brenda Laurel, Ph.D., Art Center College of Design, Pasadena				
Breakout Tracks	New Technologies & Trends	Interactive Media	IT Implementation and Support	Strategic Planning/ Administrative Issues	Teaching with Technology
10:00 - 11:30am	W1 Handhelds - Panel Session	W2 Interactive Labs - Panel Session	W3 Faculty Development and Support - Panel Session	W4 Accessible Information Technology	W5 Teaching in New Technology Environments - Panel Session
11:30am - 12:30pm	Poster Sessions in Exhibit Hall				
2:15 - 3:15pm	W6 Wireless on Campus - Panel Session	W7 Desktop Video Capture	W8 The Technical Assistance Center (TAC)- A Web-based Help Desk Tool	W9 Assistive Technology and Accessibility Issues - Panel Session	W10 Security and Academic Integrity Issues - Panel Session
3:30 - 4:30pm	W11 Streaming Media - Panel Session	W12 Web-Based Image Databases	W13 Evaluation Strategies - Panel Session	W14 Online Infrastructure	W15 Project-based Learning/Information Sciences and Technology
4:30 - 5:30pm	Panel: "Waiting for Disruptive Technologies? How to Deal with Change"—Moderator: Howard Strauss, Princeton University				
11:30am - 2:00pm	Exhibit Hall Open Delegate Lunch in Exhibit Hall				
Thursday, July 31, 2003					
8:30 - 9:45am	Closing Keynote: "Command, Control & Curriculum"—Kenneth C. Green, The Claremont Graduate University, Campus Computing Project				
Breakout Tracks	New Technologies & Trends	Interactive Media	IT Implementation and Support	Strategic Planning/ Administrative Issues	Teaching with Technology
10:00 - 11:00am	Th1 Digital Media Training: Using Digital Video as a Learning Tool	Th2 Using Locally Developed Tools for Web-Enhanced Courses: Advantages and Limitations	Th3 10-Steps to Moving Your Class to the Web	Th4 Compensation Strategies in Web-Based Distance Education	Th5 GeriU, The Online Geriatrics University: A Managed Learning Environment Case Study
11:15am - 12:30pm	Closing Panel: "Technology in Education: Past, Present and Future"—Moderator: Judith V. Boettcher, Ph.D., Designing for Learning				

Note: Syllabus2003 reserves the right to make changes in the program and presenters, or to cancel courses if enrollment criteria are not met or when conditions beyond our control prevail.

Featured General Sessions

WWW.SYLLABUS.COM

Stanford Featured Speaker

MONDAY, JULY 28 • 10:45 – 11:45AM

CHOICES AND CHALLENGES: LESSONS LEARNED IN THE EVOLUTION OF ONLINE EDUCATION

Andy DiPaolo, Ed.D. - Executive Director, Stanford Center for Professional Development (SCPD) & Sr. Associate Dean, School of Engineering, Stanford University

Dr. Andy DiPaolo will discuss the rise of a new online education industry and the lessons learned by educational institutions and corporations involved in networked learning. He will draw on his work in leading the SCPD, one of the largest university distance education organizations in the country, as well as his role as a consultant to universities, government organizations and corporations involved in distributed learning. His presentation will offer the results of Stanford University's studies on the marketplace forces of graduate and professional education and how traditional universities as well as education entrepreneurs have crafted innovative programs and practices to meet the needs of changing student populations.

Stanford Panel

MONDAY, JULY 28 • 4:15 – 5:30PM

INNOVATIVE LEARNING SPACES — A NEW FRONTIER?

Moderated by Phillip D. Long, Ph.D. – Senior Strategist, Academic Computing Enterprise, MIT

Innovation in technology and architecture presents new learning opportunities for faculty and students. But it also presents challenges for developing effective teaching models and evaluating the effectiveness of our efforts. Join this panel of experts as they discuss new educational and assessment models, along with how to make the most of a high-tech space. Hosted in Stanford's newly renovated Wallenberg Hall, participants will experience the technology as Stanford students do — real time as part of the learning experience.

PANELISTS: David Brown, Wake Forest University ■ Gary Brown, Washington State University (invited) ■ Bob Smith, Stanford University

General Session Panel

TUESDAY, JULY 29 • 4:30 – 5:30PM

PEDAGOGICAL AND FISCAL PLANNING FOR SUCCESSFUL DISTANCE LEARNING PROGRAMS

Moderated by William H. Riffee, Ph.D. – Associate Provost for Distance, Continuing and Executive Education, University of Florida

The amount of competition currently taking place in higher education with respect to distance education necessitates a comprehensive planning approach allowing for flexibility, modularization, and the opportunity to generate revenue. Institutions are now considering both good pedagogy and economic viability in planning, developing, and implementing successful distance learning programs. Panelists will share policies, processes and lessons learned at their institutions.

PANELISTS: Jack Wilson, Ph.D., UMassOnline (invited) ■ Evan T. Robinson, Ph.D., Shenandoah University ■ Andy DiPaolo, Ph.D., Stanford University

General Session Panel

WEDNESDAY, JULY 30 • 4:30 – 5:30PM

WAITING FOR DISRUPTIVE TECHNOLOGIES? HOW TO DEAL WITH CHANGE

Moderated by – Howard Strauss, Princeton University

All new technologies are potentially disruptive, and while you can't avoid the disruptions, planning for them can make a great difference. Most IT groups are not set up to deal with change and some are in fact quite resistant to change. How can you make staff and administration more open to change and how can you make room for change in your technology plans? Of course, real change puts you in unfamiliar territory. How do you deal with the next strange thing — and the next and the next — that comes along?

PANELISTS: Jacqueline Brown, University of Washington ■ Phillip D. Long, Ph.D., MIT ■ Charles Kerns, Stanford University

General Session Panel

THURSDAY, JULY 31 • 11:15AM – 12:30PM

TECHNOLOGY IN EDUCATION —PAST, PRESENT, AND FUTURE

Moderated by Judith V. Boettcher, Ph.D., Designing for Learning

Join the members of the Syllabus Conference Board for reflections and visions of how technology in higher education is impacting teaching and learning, our systems and our infrastructures. This panel will weave the many themes of the conference into reflections and summaries that you can share with your colleagues, and project visions for the future.

PANELISTS & SYLLABUS BOARD MEMBERS:

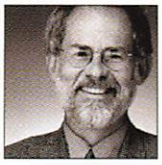
Lois Brooks, Stanford University ■ Jacqueline Brown, University of Washington ■ Kathy Christoph, University of Wisconsin-Madison ■ Phillip D. Long, Ph.D., MIT ■ William H. Riffee, Ph.D., University of Florida ■ Frank Tansey, CaliforniaColleges.edu

Opening Keynote

MONDAY, JULY 28 • 8:30 – 9:30AM

HIGH PERFORMANCE LEARNING ENVIRONMENTS: DREAMS AND DEVELOPMENTS

Roy Pea, Ph.D. – Professor of Education and Learning Sciences Director, Stanford Center for Innovations in Learning (SCIL), Stanford University



Uses of computing in higher education and K-12 alike should become increasingly guided by advances in the sciences of learning and by continuous improvement cycles that aim to establish "high performance learning environments." While much emphasis in e-learning has elaborated uses of networks to support distance learning, we also must focus on the values of enhancing place-based learning using collaborative computing and large displays for knowledge building, as well as embedded "take-the-pulse" assessment activities embedded in learning work. In these ways we can leverage networking technologies inside the classroom to transform the work practices of learning and teaching. Dr. Pea will describe Stanford University's experiences at Stanford's Wallenberg Hall *(<http://wallenberg. stanford.edu/)* and elsewhere in making progress on these issues.

Tuesday Keynote

TUESDAY, JULY 29 • 8:30 – 9:45AM

THE VIRTUE OF DISORDER: SLOPPINESS, SERENDIPITY, AND OPENNESS IN EDUCATIONAL MATERIALS

James Boyle – William Neal Reynolds Professor of Law, Duke University Law School

Recent debates about the proper role and extent of intellectual property in education and educational materials have been both intense and heated. Faculty members, university administrators, students and entrepreneurs have disagreed with each other and, frequently, with themselves about ownership, control, incentives, and access. Much of the debate has taken an economic form and technology has added a new level of complexity. How can we best provide the highest quality materials at the lowest price? James Boyle will argue that we are on the tipping point between two very different economic and technical systems for the delivery of intellectual content and two very different communications architectures. Each system will come to seem "rational" if we take a few steps towards it and each has plausible arguments in favor of it. In picking between the two, Boyle claims, our choice should be guided by an unlikely set of values for educators: the virtues of ignorance, disorder, and sheer fortuitous chance.

Wednesday Keynote

WEDNESDAY, JULY 30 • 8:30 – 9:45AM

INTEGRATIVE DESIGN: REVISIONING EDUCATIONAL INFRASTRUCTURE

Brenda Laurel, Ph.D. – Chair, Media Design Program, Art Center College of Design

Faculty and students routinely find technological infrastructures to be inadequate, inaccessible, or irrelevant. Educators often think of technology and curricula as separate goals: all want better technological infrastructure and all want more effective curricula. But as long as these two goals are approached in isolation, the larger strategic goal of improving the quality of higher education is unlikely to be achieved. Dr. Laurel will present her work in integrative design—a strategy that considers both technological and curricular development as tools that must be employed in concert. She will illustrate tactics that support this strategy—project-based and research-intensive course definitions—showing how connections among students, between students and faculty, across disciplines, and between the academy and the community may be enhanced.

Thursday Keynote

THURSDAY, JULY 31 • 8:30 – 9:45AM

COMMAND, CONTROL & CURRICULUM

Kenneth C. Green – Visiting Scholar, The Claremont Graduate University and Director, Campus Computing Project

Twenty years into the so-called "computer revolution in higher education," the campus community still struggles with the role of information technology in the curriculum. Why? Drawing on data from The Campus Computing Project and other sources, Casey Green's presentation will review academe's experience with technology, focusing on the diffusion of innovation and information technology in teaching, learning, and scholarship.

Seminars: Sunday, July 27

WWW.SYLLABUS.COM

Seminars are full or half-day classroom-style presentations held at the San Jose Marriott.

Full-day: 9:30am – 12:30pm & 1:30 – 4:30pm
Half-day: 9:30am – 12:30pm or 1:30 – 4:30pm
Lunch and breaks included

S1 Instructional Design in the Web Space: Issues and Strategies

Full day

Judith V. Boettcher, Ph.D., Designing for Learning

Faculty and administrators will explore the foundations of instructional design and development, steps in preparing courses, and strategies for managing administrative challenges, including cost, time, and infrastructure needs for online learning.

S2 Building a New Media Curriculum on a Liberal Arts Foundation

Full day

Robert D. Cavalier, Ph.D., Carnegie Mellon University

This seminar will discuss the process of integrating a Liberal Arts curriculum into the context of New Media courses and introduce faculty and administrators to the various aspects of the New Media Curriculum. Participants will become acquainted with resources that will help them implement programs and courses on their own campuses.

S3 The Design and Programming of Interactive 3D for Educators

Half day, 9:30am-12:30pm

Marty Plumbo, University of Cincinnati College of DAAP, School of Design

The ability to create interactive 3D multimedia has the potential to transform eLearning. In this classroom seminar, you will explore the creation of educational multimedia with Director Shockwave 3D and be introduced to many of the special issues that attend the design of interactive 3D eLearning content.

S4 A Systems Planning Approach to Faculty Development

Half day, 9:30am-12:30pm

Gayle Burns, California State University-Los Angeles and Henryk Marcinkiewicz, Ph.D., Pennsylvania College of Technology

This seminar poses a practical answer to the question of how to organize and implement a faculty development program that balances pedagogy with technology. It pursues the dual goals of integrating instruction with technology and professional development. The model is based on systems planning and draws together learning factors and implementation strategies. Participants will discuss feasibility issues and the assessment of key environmental conditions.

S5 Entrepreneurship, eLearning, and Higher Education: Taking Calculated Risks

Half day, 9:30am-12:30pm

Evan Robinson, Ph.D., Shenandoah University

The recent economic issues within higher education warrant re-thinking the idea of revenue generation. This session will discuss how entrepreneurship can be applied within an academic model, how to identify alternative markets and to re-purpose digital content for those markets.

S6 XML—An Emerging Technology for Education

Half day, 1:30-4:30pm

Frank Coyle, Director of Software Engineering, Southern Methodist University

For educators, XML is playing an increasingly important role in both content delivery and infrastructure management. This session will explore XML's origins, structure, and support technologies. We'll look at how Cascading Style Sheets (CSS), XHTML, SVG, and VoiceXML open up options for delivering XML to a variety of devices in different formats. We'll also contrast and compare DTDs and XML Schema, and explore new developments in XML support technology including W3C's XSLT, XPath, XLink and XQuery initiatives. The session will wrap up with a look at SMIL, the Synchronized Multimedia Integration Language that brings sophisticated multimedia presentations into the hands of educators.

S7 Selecting Wireless Technologies for the Classroom

Half day, 1:30-4:30pm

Gerald L. Boerner, Azusa Pacific University

This seminar reviews the options available for installing wireless networks in an education environment. It will emphasize the identification of realistic and practical limits to the use of wireless networking in support of instructional programs, with special attention is given to the extension of the classroom beyond brick-and-mortar walls.

S8 Increasing Institutional Productivity with a Technology-Enabled Faculty

Half day, 1:30-4:30pm

David Starrett, Ph.D. and Michael Rodgers, Ph.D., Center for Scholarship in Teaching and Learning, Southeast Missouri State University

In a time of declining resources, enhancements to faculty productivity can make a compelling argument for continued instructional technology investment. Participants will explore faculty development as a means of leveraging the potential of technology to improve productivity.

Stanford Programming & Special Events

In celebration of our 10th anniversary, Syllabus2003 is featuring a day of learning and enlightenment at beautiful Stanford University. Included in your Gold or Silver registration package, this special day affords you the opportunity to see, feel, and experience the latest education technology in action at one of America's most prestigious universities.

Following Monday's keynote address on high performance learning environments by Roy Pea, Ph.D., Professor of Education & Learning Sciences at Stanford University, you will be transported to the Stanford campus to experience Wallenberg Hall, the university's highly regarded Distance Learning Program and a choice of themed breakout sessions. This will be an active day on campus, so comfortable shoes are the order of the day. Lunch is included.

Schedule for the Day at Stanford

10:45-11:45am ..... Featured Speaker: Choices and Challenges: Lessons Learned in the Evolution of Online Education
Andy DiPaolo, Ph.D., SCPD Executive Director/ Senior Associate Dean, School of Engineering, Stanford University

11:45 am - 1:00pm..... Lunch in Dohrman Grove

1:15-4:00pm..... Concurrent Activities/Breakout Sessions

The following activities will be offered concurrently, allowing you and your fellow Syllabus2003 delegates the freedom to choose where you want to spend your time at Stanford University.

- Wallenberg Hall Experience
- Stanford Center for Professional Development Program (SDPD)
- Breakout Sessions:
  - MIT OpenCourseWare Initiative
  - Open Source Course Management Systems/OKIStandards
  - IT Implementation and Support: ePortfolio Community
  - Strategic Planning/Administrative Issues: Accreditation of Distance Learning Programs
  - Teaching with Technology: Instructional Design Standards/DL

4:15 - 5:30pm..... Panel: Innovative Learning Spaces — A New Frontier?
Moderator: Phillip D. Long, Ph.D., Senior Strategist, Academic Computing Enterprise, MIT

4:00 - 6:00pm..... Buses return to San Jose Marriott

Wallenberg Hall

This unique, state-of-the-art learning facility embodies Stanford's commitment to understanding how people learn and to using that knowledge to improve the educational process. Its classrooms support traditional and emerging modes of teaching and contain sophisticated collaborative computing environments. The rooms have the ability to record activities for later use, large wall displays that can be used as recording whiteboards, as well as for videoconferencing and presentation, and adjacent breakout spaces for group work. Stanford's MediaX interdisciplinary research network is also housed here.

Stanford Center for Professional Development (SCPD)

In partnership with over 450 member companies and government organizations, SCPD delivers academic programs to more than 5,000 students annually using cutting edge, interactive technologies via broadcast television, videotapes, and the Internet. The Center fulfills career-long educational needs of engineers and other industry professionals, regardless of time or distance, through award-winning degree and non-degree academic courses from the School of Engineering and affiliated departments.

Frances C. Arrillaga Alumni Center

Stanford Day Breakout Sessions

Syllabus editor Mary Grush, in collaboration with Stanford University's Director of Academic Computing, Lois Brooks, has put together an exciting selection of sessions for Syllabus2003 delegates. From open course management to instructional design standards, the breakouts on IT issues and solutions provide you with a number of choices during this portion of your day.

Exhibit Hall & Conference FAQs

WWW.SYLLABUS.COM

Exhibit Hall

Need a break from the breakouts? The Syllabus2003 exhibit hall is where the conference community meets to see the latest products and services from technology vendors, as well as informal Poster Sessions on a variety of topics.

Schedule & Special Events

Tuesday, July 29

Exhibit Hall Open and Attendee Lunch
11:30am—2:00pm

Poster Sessions
11:30am—12:30pm

Exhibit Hall Open and Reception
5:30—7:00pm

Wednesday, July 30

Exhibit Hall Open and Attendee Lunch
11:30am—2:00pm

Poster Sessions
11:30am—12:30pm

Exhibit Hall Raffle
1:30pm

Poster Sessions

Always popular at Syllabus conferences, these sessions provide a detailed look at graphic presentations and papers on technology applications and best practices. Poster presenters will be on hand for Q&A and detailed informal discussion. Plans are for up to 25 poster sessions per day, located in the exhibit hall. Look for details on the Syllabus2003 Web site at www.syllabus.com.

FAQs

In an effort to answer your questions about the conference, we have developed a comprehensive FAQ section on the Syllabus2003 conference website at www.syllabus.com. The following FAQs will answer some of your key questions as you navigate this brochure.

- **How can I network with peers who have similar interests?**
  Be a part of pre-conference networking with paid delegates by checking the "Networking" box when you register. Prior to the conference you have an opportunity to introduce yourself to other delegates and arrange to meet and network.
- **What meals are included with registration?**
  A selection of light pastries will be available before courses beginning in the morning. Additionally, the hotel has a Peet's Coffee bar in the lobby area for your convenience. For all paid delegates, lunch is provided each day.
- **Where can I find things to do in San Jose?**
  Visit this San Jose website: http://www.sanjose.org. There are links to local attractions and restaurants.
- **Will there be internet access in my hotel room?**
  Yes, all rooms have high-speed internet access available. Additionally, there will be an e-Mail Café for all delegates onsite.
- **Do you accept Purchase Orders?**
  If you would like to use a Purchase Order to register, please contact Dena Fisher, Conference Services Coordinator at 1.800.280.6218 or 1.541.346.3537 to make arrangements.
- **Where can I request a receipt?**
  You will receive an official receipt on your badge when you check in at the conference. However, if you need a receipt before you arrive onsite, you may request one by writing to syllabus@oregon.uoregon.edu or by calling the registration office at 1.800.280.6218. Receipts are processed weekly.

General Information

Hotel Information:

San Jose Marriott
301 South Market Street
San Jose, CA 95113
1.408.280.1300

A special room rate of $134 single or double has been reserved for Syllabus2003 attendees. Attendees must book their accommodations byJuly 6, 2003, to receive the discount. After that date regular room rates will apply. Rooms at the special rate are available from Thursday, July 24, 2003 through Sunday, August 3, 2003, based on availability.

To make reservations, call: 1.800.831.4004

Parking

Valet parking is available at the hotel at a cost of $19 for overnight parking or $4 per hour. There is also a parking garage located at the convention center next to the hotel where self parking is available for $10 per day.

Shuttle Service & Directions

The hotel is 3 miles away from the San Jose Airport.Transportation will need to be arranged by shuttle, taxi, or rental car. For rental car, see the information on this page on discounts with AVIS. For all other transportation please visit the San Jose Airport's website at: www.sjc.org/ and click on Ground transportation.

Directions to the hotel can be found on the Marriott website at: www.marriott.com.

Air Travel Discount

Southwest Airlines offers up to 10 percent off most fares for air travel to and from this event (Oakland or San Jose airports), with the convenience of Ticketless Travel. To qualify, call Southwest Airlines Group and Meetings Reservations at 1.800.433.5368 and reference I.D. Code #Z0184. Reservations Sales Agents are available 7:00am- 8:00pm Monday-Friday, or 8:30am-5:30pm Saturday-Sunday (Central Standard Time).

Book early to receive the best discount.

Rental Car Discount

AVIS Rent-a-Car is offering a special discount on any size car rental for Syllabus2003 attendees. To receive the discounted daily and weekly rates, simply call AVIS at 1.800.331.1600 and use AVIS Worldwide Discount #D005872.

Delegate Networking

Interested in networking with other paid delegates? Then be sure to check the delegate networking box when you register. We will provide you and other registrants with the names, titles, companies and e-mail addresses of fellow attendees so that you can communicate before and after the conference.

Weather and Dress

Temperatures inside the meeting rooms can vary greatly and are often cool so plan your attire accordingly. Dress for the conference is business casual. San Jose and Palo Alto have moderate temperatures in July with an average high of 84F and an average low of 58F. Rainfall during this time of year is an average of .06 inches or .2 millimeters.

Registration Information

How to Register

Online: www.syllabus.com/summer2003

Phone: 1.800.280.6218 (8:00am – 5:00pm PST)

Fax: 1.541.346.3545 (credit card payment only)

Mail: Syllabus2003 Registration

1277 University of Oregon

Eugene, OR 97403-1277

On-site: You may register for the conference onsite. However space is limited and admission cannot be guaranteed.

Registration Deadlines

- Early Registration Discount Deadline June 27, 2003
- Regular Online Registration Deadline July 24, 2003
- After July 24, please register onsite. Registration will be limited to space available.

Group Packages & Discounts

When five or more people from a single company or organization register at the same time, you can realize great savings. Early bird savings apply! (See page 14 for details.)

Refund & Cancellation Policy

A 100% refund less a $50 processing fee will be given for all cancellations requested before June 27, 2003. After June 27, 2003, no refunds will be given; however, all registrations are transferable to colleagues and associates with written authorization from the original registrant.

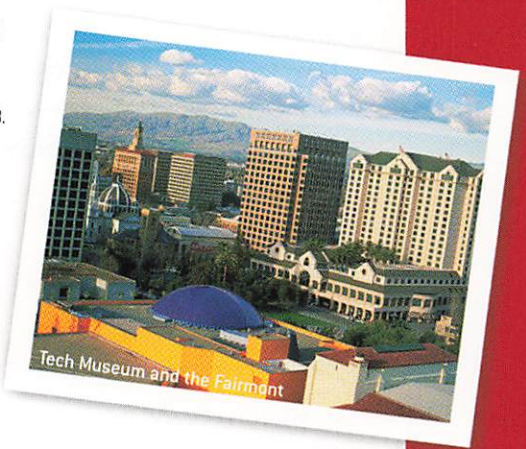
Registration Questions?

- Phone: 1.800.280.6218 (8:00am – 5:00pm PST)
- Email: syllabus@oregon.uoregon.edu
- Web: www.syllabus.com/summer2003

Syllabus2003's federal tax ID number is 95-4758348.
Syllabus2003 is a division of 101communications.

Secure Web Registration

Rest easy – online registration at www.syllabus.com/summer2003 is secure. Our secured server environment keeps your information private.


Tech Museum and the Fairmont

Registration Packages

WWW.SYLLABUS.COM

BEST VALUE

Gold Package

- All 5 days
- Sunday Seminars
- Day at Stanford University
- All Conference Sessions
- Keynotes & General Sessions
- Access to Exhibit Hall
- Exhibit Hall Reception
- Poster Sessions
- Lunch Sun. – Wed. & Breaks

All for only $795
Save $200 through June 27

Silver Package

- Mon. – Thur. only
- Day at Stanford University
- All Conference Sessions
- Keynotes & General Sessions
- Access to Exhibit Hall
- Exhibit Hall Reception
- Poster Sessions
- Lunch Mon. – Wed. only & Breaks

All for only $645
Save $150 through June 27

Bronze Package

- Sunday Seminars
- Lunch & Break

Only $345
Save $50 through June 27

New Group Pricing Plans!

- Silver Package (Mon. – Thurs. Only*)
- Day at Stanford University
- All Conference Sessions
- Keynotes & General Sessions
- Access to Exhibit Hall
- Exhibit Hall Reception
- Poster Sessions
- Lunch Mon. – Wed. & Breaks

- **5 Pak Group Rate**
  Up to 5 delegates only $2,750
  Save $750 through June 27
- **10 Pak Group Rate**
  Up to 10 delegates only $4,500
  Save $1500 through June 27

*Add Sunday Seminars for only $100 per person!

To register your group, or for more information call Sara Seely at 1.949.265.1560.

Registration Form

Syllabus 2003
10th Annual Conference and Expo

Step 1 Type or Print Your Name, Address, Phone Numbers, and Email ID Very Clearly (Photo copy this form for additional registrations)

First Name

Last Name

Title & Institution

Mailing Address

City

State/Province Zip/Postal Code

Country

Day Phone

Fax

E-mail*

*Required! (Please print this ID very clearly. We do last minute confirmations and announcements via e-mail.)Your e-mail address is used to communicate with you about your Syallbus2003 registration and future Syllabus2003 conferences. As a registered attendee you may receive relevant e-newsletters from Syllabus2003, a 101communcations event. By providing your e-mail address you are also granting Syllabus2003 permission to contact you regarding other products and services of 101communications and/or carefully selected outside companies. Please indicate those you **DO NOT** wish to contact you:

- ☐ Other IT products/services from 101communications
- ☐ Carefully selected outside companies

☐ Delegate Networking – yes, I want to participate. (See page 13 for details)

Step 2 Choose Your Registration Package and Calculate Your Payment

Registration Packages	Early Bird (Through June 27)	Regular (After June 27)
Gold (All 5 days)	☐ $795	☐ $995
Silver (Mon-Thur)	☐ $645	☐ $795
Bronze (Sun only)	☐ $345	☐ $395
FOR GROUP REGISTRATIONS, PLEASE CALL SARA SEELY AT 1.949.265.1560		
Group 5 Pak* (Mon-Thurs)	☐ $2,750	☐ $3,500
Group 10 Pak* (Mon-Thurs)	☐ $4,500	☐ $6,000

*Sunday Workshop can be added for $100 per person

Total Fee $_____

☐ Check Enclosed (payable to 101communications/Syllabus)

Credit Card: ☐ Visa ☐ MasterCard ☐ AMEX ☐ Discover Card

Number_____ Exp. Date_____

Name_____

Signature_____

Address if Different From Above

Address_____

City_____

State/Province_____ Zip/Postal Code_____

Step 3 Demographic Questions

Please tell us where you work:

- ☐ 4-year college
- ☐ 2-year college
- ☐ Vocational institution
- ☐ Other

How did you hear about Syllabus2003?

- ☐ Received brochure in the mail
- ☐ Saw brochure in Syllabus
- ☐ Syllabus e-newsletter
- ☐ Syllabus website
- ☐ 101communications website
- ☐ From colleague/co-worker
- ☐ My association sent me
- ☐ Other publication

Please indicate your primary role:

- ☐ Faculty Member
- ☐ Department Chair
- ☐ Administrative Computing/MIS
- ☐ Administrative Computing/Technology
- ☐ Media Center Director, A/V Supervisor
- ☐ Exec. Officer/Director-Dean
- ☐ Exec. Officer/Director-Library
- ☐ Exec. Officer/Director-Other
- ☐ Media Center
- ☐ Other_____

Step 4 Send in Your Registration

MAIL registration with full payment to: Syllabus2003, 1277 University of Oregon, Eugene, OR 97403-1277 or, if you use a credit card, FAX your registration to: 1.541.346.3545.

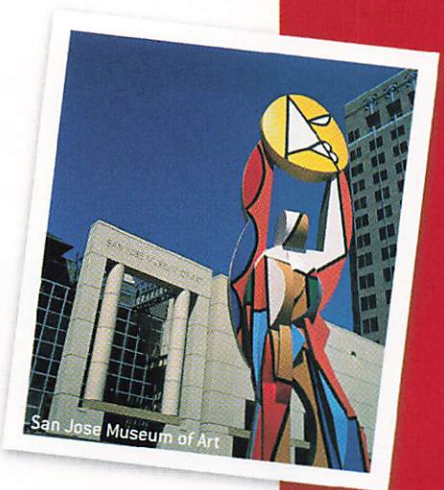
You may also register ONLINE through our secure Web site at www.syllabus.com/summer2003.

If you would like to use a Purchase Order to register, please contact Dena Fisher, Conference Services Coordinator at 1.800.280.6218 or 1.541.346.3537 to make arrangements.

Step 5 Select Your Sessions Online

After receiving your confirmation code, you may go to the registration page at www.syllabus.com/summer2003/ and enter your code. Then select the conference breakout sessions that you are interested in attending. This will help us in planning logistics, however, it is not binding nor required.

Stanford sessions limited to first 500 registrants. Register early to secure your place!

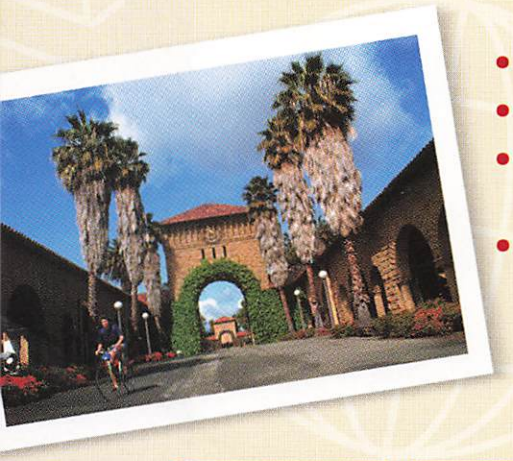


Syllabus 2003

10th Annual Conference and Expo

July 27-31 • San Jose Marriott • Stanford University

Experience the education, enrichment, entertainment and more!



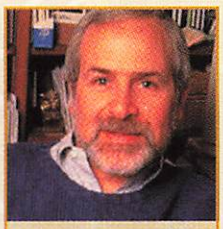
- New Conference Education Tracks!
- Special Day at Stanford University!
- New Early Bird Discounts & Group Registration Packages!
- Great Keynote Speakers!

REGISTRATION NOW OPEN!
WWW.SYLLABUS.COM

Roy Pea, Ph.D.
Professor of Education and Director, Stanford Center for Innovations in Learning

James Boyle
Professor of Law, Duke University

Brenda Laurel, Ph.D.
Chair, Media Design Program, Art Center College of Design, Pasadena



Kenneth C. Green
Visiting Scholar, The Claremont Graduate University

REGISTER TODAY AT: WWW.SYLLABUS.COM

CONFERENCE BROCHURE

101communications

Sally M. Johnstone

As founding director of the Western Cooperative for Educational Telecommunications (WCET) at the Western Interstate Commission for Higher Education (WICHE), Sally Johnstone serves as a resource on higher education technology issues. She also serves on the Board of the American Association of Higher Education, the U.S. Open University's Board of Governors, and the Advisory Panel for the Consortium for the Advancement of Private Higher Education.
sjohnstone@wiche.edu

International eLearning Partnerships

As the international political world seems to be getting less cooperative, people in higher education are trying to move closer to one another. Despite the differences in systems and credentialing in different countries, many universities are finding ways to collaborate on distance learning programs.

Most of the cases often start modestly. The really successful ones usually begin with a connection between individual faculty members from different institutions who believe their own students could benefit by linking with the other's students.

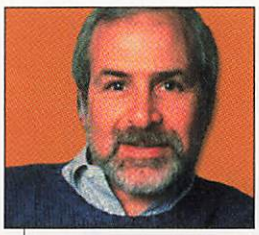
There are always problems to overcome. For example, a few years ago two American Studies professors, Dr. E and Dr. U, wanted to link classes and teach one another's students. One professor was at an Eastern European University (EEU), the other at a U.S. public university (USPU). The two professors worked together to combine their instructional materials onto a single Web site and agreed on the nature of the joint student projects. They set up arrangements for all students to have modest phone-calling cards for individual conversations and subscribed the students to a listserv hosted at USPU.

Sounds great, but as the classes began a few problems arose. One started before the classes even began. At EEU, American Studies was a new course and subject area. The faculty of EEU had to approve it. That process usually takes a couple of years, so Dr. E decided to go ahead and offer the class as a non-credit course. Students were still interested, but even they found that getting access to the Internet to participate in the discussions was difficult. The USPU students, it turned out, were very nervous calling a foreign country, although it cost them nothing. Using some grant money, the two professors were able to get access to a computer lab at EEU with relatively high-speed access. This helped a great deal and the student discussions flourished. In addition, the professors loaded the course materials onto CDs to give the EEU students better access.

Even so, the joint student research projects became bogged down because the EEU library had almost no resources on issues that generally arise in American Studies. That required a different set of solutions and sharing of academic resources between the institutions.

The happy ending of the story is that the efforts of the two professors paid off. The EEU faculty did approve the course. Students from each country did learn a great deal more about each others' cultures and lives through their online interactions. The tough part of this story is the incredible effort required by two committed professors to make it all work.

We need more of these eLearning partnerships so students can get the benefit of an international perspective. As these are set up, we need to learn from the mistakes and successes of others. While those of us who are active in distance learning may have little opportunity to affect the state of world affairs right now, we do have the knowledge and the tools to change how future citizens of many countries regard one another. It just might help.



Kenneth C. Green

Casey Green, visiting scholar at The Claremont Graduate University, is the founding director of The Campus Computing Project, a comprehensive, continuing study of the role of information technology at higher education institutions in the United States (www.campuscomputing.net).

The Value of Content

You'll be pleased to know that the world remains a safe place for Mickey Mouse, at least for another 20 years. That, in essence, is one consequence of the U.S. Supreme Court's decision on Jan. 15, 2003 in *Eldred v. Ashcroft*. The Supreme Court affirmed the right of the Congress to extend the term of copyright.

Congress has extended the terms of copyright 11 times over the past 40 years. The *Eldred* case, strongly supported by many in the campus community, was a challenge to the 1998 Sonny Bono Copyright Term Extension Act, which added an additional 20 years to the term of copyright.

Backed by Disney and other media companies, the Bono Act extends the term of copyright protection up to 95 years for the creative work of corporations (think Mickey and Minnie Mouse, as well as Yoda, the Jedi Warrior). The Bono Act also extends copyright for the creative work of individual authors and artists (for example, Anne Frank, Ralph Ellison, Joyce Carol Oates, and JRR Tolkein) for up to 75 years following the death of the creator.

The campus and publishing communities can and will argue the merits of the *Eldred* decision for years to come. In addition to protecting Disney characters, the decision also slows the movement of content into the public domain. So while you can access public domain texts by hundreds of 18th and 19th century authors, including Louisa May Alcott, Harriet Beecher Stowe, and Mark Twain at Project Gutenberg (www.gutenberg.org), the Bono Act, as affirmed by the Supreme Court in January, impedes the migration of 20th century content into the public domain (and, by extension, to the Web).

The Bono Act and *Eldred* decision have other consequences, both symbolic and substantive. The *Eldred* case marks the third time in the past dozen years that publishers have gone to the courts to affirm copyright protection. In 1991, a federal court ruled that Kinko's violated copyright by preparing coursepacks without securing permissions or paying royalties. And in February 2001, a federal appeals court upheld a lower court decision which found that Napster, the file swapping service, violated copyrights.

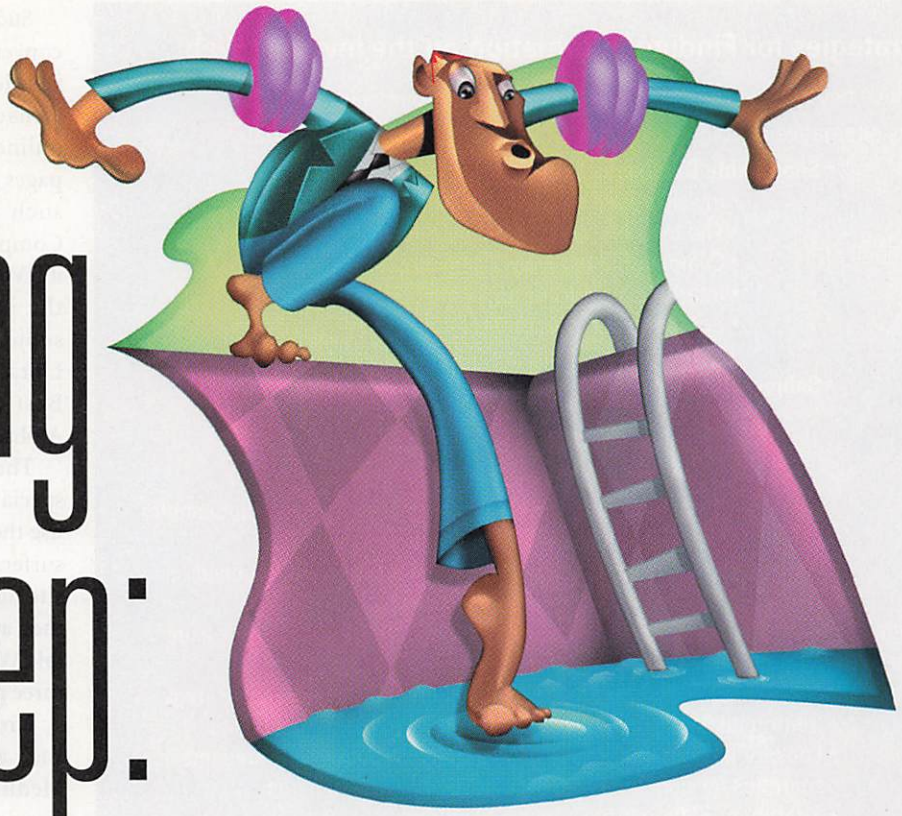
In each instance—Kinko's, Napster, and Eldred—the publishers won in the courts. But winning in the courts has not solved the problem of losing in the marketplace. Indeed, these court decisions have not resolved the challenges posed by market demands or by the new technologies that facilitate the distribution of content. Most importantly, the decisions have not addressed the *value* of content in the digital age.

Admittedly, campus conversations about the value of content can be contentious. Many students and faculty believe that content—books, articles, music, and media—should be free. (Correction: Many professors feel that all books and articles should be free—except, of course, their own publications!) Officials in the book publishing and recording industries argue that college students are not willing to pay for content.

And yet, every time I visit a school, college, or public library, I see ample evidence documenting the value that college students and college faculty place on content.

Across the United States, what economists call the "market clearing price" for content is about seven cents a page. That's what library

continued on page 41



Getting in Deep:

After Google, the Invisible Web

By Dale Vidmar
SOUTHERN OREGON UNIVERSITY

For most of us, Web searching continues to take the form of searching Google. A simple click to Google.com produces relevant results. When Google was first released by two Stanford Ph.D. candidates, Larry Page and Sergey Brin, in 1998, the search tool transformed Internet searching almost immediately. Google incorporated linking structures into its algorithm—the code that determines the ranking of pages within a retrieval list—and, thereby, retrieved better and more accurate information. Since that time Google has added features to an index that now includes more than two billion pages.

Illustrated by Peter Lacalamita

Strategies for Finding Information on the Invisible Web

- Move beyond keyword searching on Google or other search tools
- Try alternative strategies using Invisible Web sites when appropriate:
  - **Searchable Databases:**
    - Invisible-web.net: www.invisible-web.net/
    - The Invisible Web: www.invisibleweb.com/
    - CompletePlanet: www.completeplanet.com/
    - Internets: www.internets.com/
    - Searchability: www.searchability.com/
  - **Subject Directories:**
    - Direct Search: www.freepint.com/gary/direct.htm
    - Infomine: http://infomine.ucr.edu/
    - Academic Info: www.academicinfo.net/index.html
    - Best Information on the Net: http://library.sau.edu/bestinfo/
    - Librarians' Index to the Internet: http://ipl.org/
    - Scout Report Archives: http://scout.wisc.edu/archives/
- Think of the Invisible Web as part of the whole instead of separate from traditional research
- Horizontal Searching—incorporate the Web as integral to a search strategy
  - Search the Web titles of articles found in research databases
  - Look for bibliographies on the Web that can be incorporated into searches for books, journal articles, or other documents
  - Search for authors from books and journals
  - Search for organizations and government reports
  - Follow citations onto the Web
  - Check e-mail addresses to contact authors for further information

With all this and more, Google has become the search tool of choice for most information specialists and novices alike. So why use any other search tool?

Google searching became synonymous with Web searching because it works. Brin and Page believed there were no "bad" searches when using Google. Whatever the search, Google could retrieve better information based on the relationship of link structures—in other words, good sites are linked to more often by other sites. Google quickly became the best place to look for top-level Web sites such as business, institutional, and personal homepages.

But there is more. Google organizes a query within subject categories when applicable, provides links to language translations, maintains cached links to original pages, and lists similar pages. Other features include access to street maps when typing an address with a city or state, dictionary definitions of search terms, and specialized databases, such as Google Uncle Sam for government information and University Search for information from specific institutions. With all these features and added accuracy, it becomes difficult to use anything else but Google.

What You Don't See is What You Don't Get

Ah, but there's the rub. Neither Google nor any other search tool can index all the information on the Internet. Conventional search tools such as Google, Yahoo, AltaVista, All the Web, or meta-searchers like Ixquick, Vivísimo, and SurfWax often access more than a couple billion pages in their databases. However, a large portion of available information has been difficult or impossible to search. Material that is not accessible using conventional search tools has become known as the "Invisible Web." Other names for the Invisible Web include the Deep Web, Opaque Web, and searchable databases.

Such information is not accessible to conventional search tools because it is inside databases such as the U.S. Census, Amazon.com, or a library's online catalog. The locations of these pages can be found through resources such as Gary Price's Direct Search, Complete Planet: The Deep Web, InvisibleWeb.com, and Invisible-web.net. Or the information can be located via subject directory tools like Infomine, Librarians' Index to the Internet (LII), Best Information on the Net, and AlphaSearch.

The reality is that many information specialists, as well as the general public, use the Invisible Web already. Most Web surfers have accessed an Invisible Web site at one time or another. However, they access only a portion of the Invisible Web, typically the portion found in three general forms:

First, the Fee Group, or paid databases, such as EBSCO, OVID, ProQuest, and Medline. These databases have a cost associated with use.

Second, the Free Group: government databases such as the Census, AskERIC, PublicMed, the Currency Converter, FindArticles, and library online catalogs. These databases are free for anyone to access.

And the Hybrid Group: UnCoverWeb, online newspapers like the New York Times and Wall Street Journal, which currently take this form. These databases have both free portions and fee portions.

The Not-So-Invisible Web

For the past two years, the Invisible Web has been the "next big thing" in Internet searching. The truth is, it is still a big thing. When it comes to more than 500 billion Web pages located in searchable databases, how can it be anything but big? But the Invisible Web is still unwieldy for most. Resources such as Infomine, Librarians' Index to the Internet, and Direct Search have been underused by both information specialists and novice searchers in part because they are difficult to use. However, the increasing exposure of the Invisible Web is helping to bring these resources to the surface. As more

searchers use them, access will become better, driven by the demand to find and use relevant information.

At the same time, the claim that much of the information contained on the Invisible Web cannot be found via the major search tools is becoming less and less valid. Non-HTML pages—PDFs, Microsoft Word, Excel, and PowerPoint files, and other formatted information—is becoming available via major search tools, especially Google. Other information, such as a book from my local library catalog, is just a click or two deeper. True, I may not be able to find out how much $273 dollars is worth in the currency of Jordan, but I can easily find a currency converter. So, it is a matter of knowing what you are looking for and continuing to be versatile and persistent. Using Google, the Invisible Web, or any other search tool will not miraculously transform Internet searching into anything other than what it is—an art.

Horizontal Searching: Unveiling the Invisible Web

Keyword searching Google, Yahoo, or library databases is only the beginning of a search. If we think of the Web as part of the whole instead of separate, we can connect to information found on the Internet.

Horizontal searching takes advantage of information available on both the surface and the Invisible Web. For example, cut and paste an article title from a database like PsycInfo or ERIC into a search on Google or another search tool. The results often uncover a host of related and relevant materials.

Bibliographies, full-text articles and documents, hompages of authors, and e-mail addresses found on the Web lead back to the library catalog then a separate dive into a library database and another dive into the Internet. Horizontal searching combines these resources into a comprehensive search that unveils the Invisible Web and more. For an illustration of horizontal searching, go to http://home.sou.edu/~vidmar/horizontal-searching.

Dale Vidmar is Library Instruction Coordinator/Education and Communication Librarian at Southern Oregon University Library. He can be reached at ***vidmar@sou.edu*** *or* ***www.sou.edu/library/dale.***

What is the Invisible Web?

- Internet content not directly indexed by conventional search tools
- Data primarily found in databases
- Requires a direct query to retrieve information
- Free, Fee, and Hybrid Databases
- Other terms: Deep Web, Opaque Web, Special or Searchable Databases

If It's Invisible, Why Bother?

- Generally better quality information
- More specific information
- Finding information is faster and more efficient

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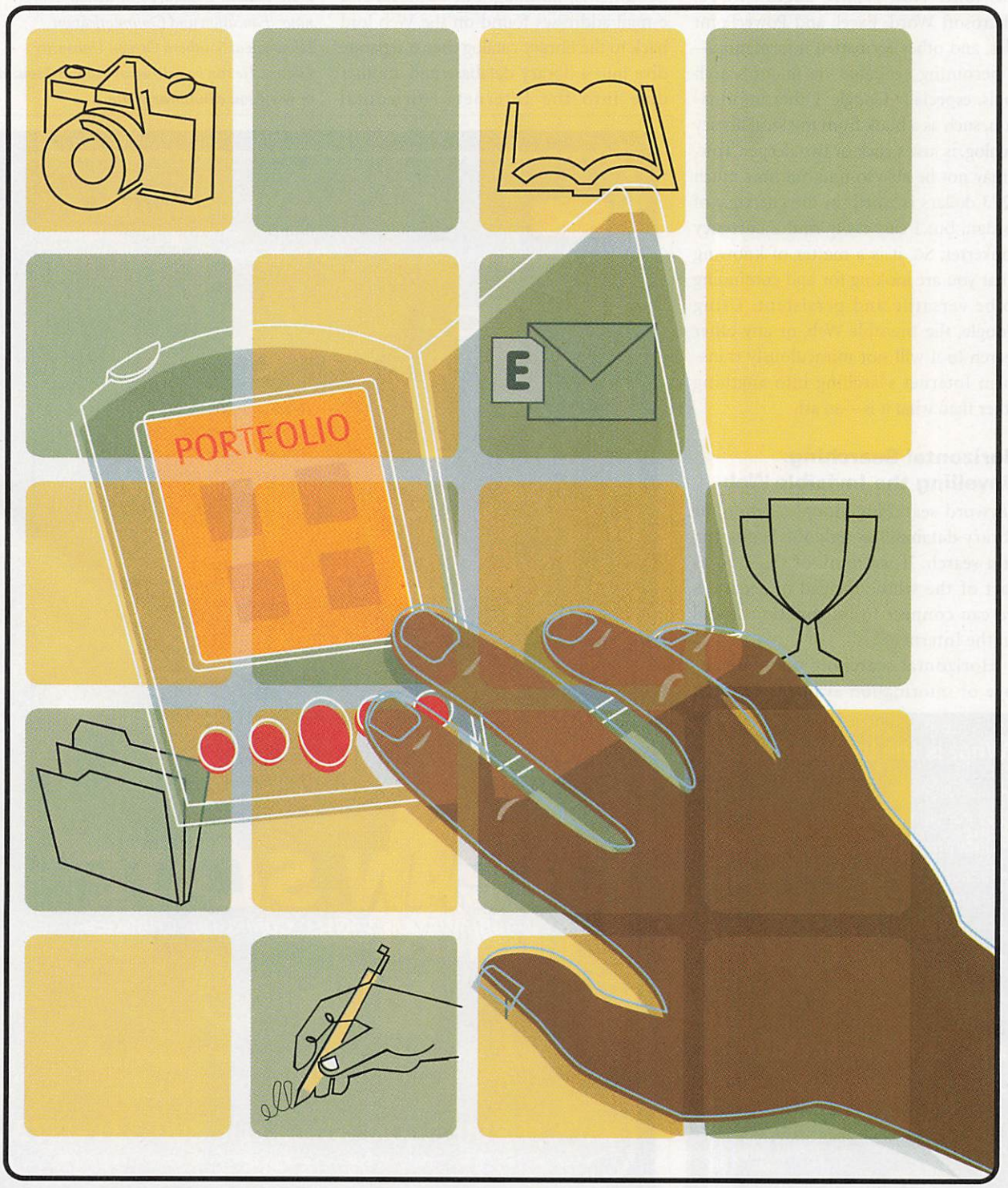
ePortfolios: A Pocket



Full of Ambition

David A. Baird • Southeast Missouri State University

The terms electronic portfolio, ePortfolio, and Web portfolio are increasingly being heard around universities teaching graphics and the companies that supply them with technology. The labels are being applied to Web-based personal portfolios, program accreditation portfolios, and student certification portfolios, among others. Naturally, with all these terms, some confusion has resulted about the definition of an electronic portfolio. Pocket portfolios are just what their name implies: portfolios recorded on digital media, that can be carried in a pocket.

Traditionally, graphic artists have submitted a text resume citing graphic projects they have completed in school or for previous employers. They then carry a large portfolio full of printed or original samples of their work to interviews. But with the advent of electronic publishing and digital imaging, another approach has become necessary. Many of the products of the "new media" simply can't be placed in a traditional portfolio. They require a computer for viewing. It has now become necessary to allow the interviewer to interact with the graphics projects.

Because the new media are digital, it makes sense to produce a portfolio that includes traditional hand-drawn images, a resume, and digital interactive multimedia. In addition to being digital, much of the new media are in video form, which emphasizes the fact that the new portfolio must have the ability to properly showcase this format. If the portfolio is produced in a manner that can be displayed on a computer screen, a true representation of the artist's work, both still and moving, can be distributed to perspective employers.

Everything discussed so far could be handled with a Web-based portfolio. However, Web sites are limited by the quality of images they can portray. Usually, Web sites are constructed to limit the screen size to 800 x 600 pixels—sophisticated graphics projects normally have a much higher resolution than this—therefore, prospective employees still need to carry prints of projects to interviews.

Web portfolios also pose problems with long-term storage. The Web site must be stored on a server that will maintain the site for extended time. Universities, at this point, loathe the thought of providing this service for graduates. The storage capacity for large numbers of graduates in graphics is staggering. This raises a slew of management questions for administrators: How long should graduate Web sites be maintained? Would graduates have access after a preset time if they pay a hosting fee? What about security of the data? Would students have access to update their sites? Because the university is hosting the site, is it responsible for certifying the quality of the student's work, even after they graduate?

Pocket Portfolio Process

Most of these problems were eliminated with a process adopted by the Technical Graphics faculty at Southeast Missouri State University. The pocket portfolio was chosen in 2000 as the format of choice for graduates of the Technical Graphics program. The process of building this portfolio begins during the students' very first graphics class at the university. Students are assigned projects that can eventually be included in their pocket portfolio. These projects are created with Photoshop, Illustrator, InDesign, Chief Architect, and AutoCAD, and range from notepads and tri-fold brochures to CD covers. Many of the projects are produced through a traditional print media such as the offset press or digital duplicator. Others, like a house plan, are created with digital media, in this case, Chief Architect, with prints of the projects submitted for evaluation.

Subsequent classes expand on the introduction to refine students' skills with these and other software packages. Digital Imaging and Editing students capture images digitally by camera, scanner, and via the Internet. These images are modified and other images are created with Photoshop. More advanced classes add to the students' expertise with software, such as 3D Studio Max, SolidWorks, Architectural Desktop, Chief Architect, Illustrator, Dreamweaver, Front Page, Fireworks, Director, Flash, Premier, and Corel Draw.

Materials produced by students throughout their studies are kept in their pocket portfolio. These files are stored on a department server and on CDs, DVDs, and Zip disks. Many of the first projects are replaced as more sophisticated examples are produced in upper-level classes. The quality of student work was found to increase when the introductory level class

placed an emphasis on traditional production methods. Students then create projects with the limitations of the eventual production equipment in mind, and create images that are more easily reproducible.

The software of choice for producing a pocket portfolio is Macromedia's Director. Director is capable of creating interactive movies that include images, text, AVIs, and animations. Images from other software packages are imported for presentation in the final portfolio.

During a capstone course, the students refine a Flash introduction to their portfolio created during a multimedia class. This introduction concludes with an interface design that allows the viewer to navigate through the student's content, whcih can be supplemented with work a student has created outside of class.

Talent Showcase

The output format of choice has been the business card CD. However, this shape limits the amount of data students can include as it has a capacity of 55MB. However, a feature of Director allows the viewer to connect to a Web portfolio where a movie can be viewed in its entirety.

If students choose, they can record their portfolios on small round (pocket) CDs, standard CDs, or DVDs. If they choose one of the larger capacity formats, the entire volume of their work can be included. At Southeast Missouri State University, the DVD format is becoming increasingly popular with the students.

Students also design custom labels for their pocket portfolio. This imparts a professional look to the portfolio, displaying some of the student's design ability, and is intended to grab a perspective employer's attention.

Some advantages of the pocket portfolio include the ability to be revised easily, convenient storage of digital images, security, and low cost. Business card CDs and pocket CDs are approximately $.50 each, while DVDs are dropping in cost dramatically. DVD-Rs currently cost under $1.00 each.

As students gain experience and maturity in their graphics abilities, they build an ever-expanding body of work. By using a pocket portfolio they have full access to their earlier materials and can update their portfolio to reflect recent work. This also eliminates the problem of data security of a Web portfolio.

While the pocket portfolio is a relatively new requirement for graduates of the Technical Graphics program, they have received great reviews. The students like the ability to include their entire portfolio in a format that is convenient to carry and distribute to potential employers. It also allows them the opportunity to showcase their abilities with new technologies, as well as their creativity in more traditional media.

David A. Baird, Ph.D., (dbaird@semovm.semo.edu) *is an associate professor in industrial and engineering technology at Southeast Missouri State University.*

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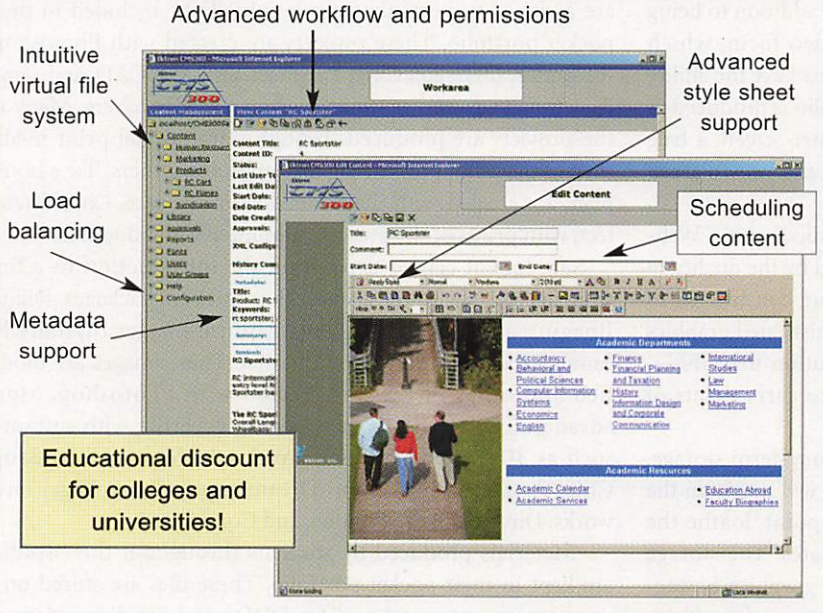

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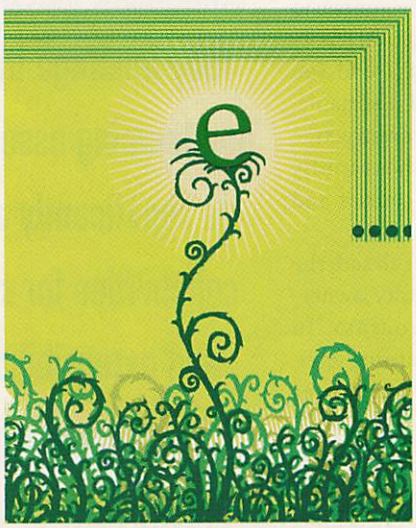
University of Alberta selects WebCT Vista to enhance its eLearning initiative ▪ Tulane University reduces costs in its accounts payable department using document management software ▪ The College of William and Mary accommodates off-site students with wireless network ▪ MEFA implements new system to expand financing services

University of Alberta

eLearning: From Grassroots to Mission-Critical

eLearning began at the University of Alberta in Edmonton, Alberta, Canada with a few brave faculty members who decided to try something new. They started small: making their course syllabi, lecture notes, or class assignments available to students via the Web. Students responded positively—even seeking out particular instructors or courses that featured online components.

Today, what began as a grassroots movement by students and faculty has evolved into an institution-wide eLearning program that is closely aligned with the university's core mission and goals. The university currently offers approximately 1,500 online courses, with more than 120,000 student registrations—and expects a continued 25 percent growth for the next several years.



Building Momentum

"Early days" of eLearning at the university consisted of individual instructors or departments using various teaching and learning tools to incorporate Web-based material into their courses. As more and more faculty ventured into the world of online learning, student demand for such courses continued to grow, prompting faculty to consolidate their efforts and work toward a centralized solution.

The first step involved forming a committee to evaluate and select a centrally supported course management system for the school. The committee consisted of representatives from across the university, including faculty members, support professionals, and IT staff.

The university looked at eLearning as a competitive advantage and powerful means of working toward strategic institutional goals, such as improving the learning environment, recruiting and retaining top-notch faculty, and attracting high-achieving students. After evaluating several eLearning applications, WebCT's course management system was selected.

Smart Growth

The school began development and testing of the pilot course management system in the spring of 1998. In September, the system went live with 100 courses and 8,000 users. By the end of the 1998-1999 academic year, those figures rapidly grew to 375 courses and more than 14,000 users. Course offerings spanned the university's departments and included undergraduate, graduate, certificate, and extension programs.

Susan Stein, Distributed Learning Project Lead and WebCT Administrator for the university's Computing and Network Services (CNS), group is responsible for driving the adoption of the WebCT solution on campus. She has worked to align the department's efforts with mandates and objectives outlined in the key strategic initiatives.

"Our role in CNS is to provide end-to-end support for the university's eLearning initiatives, encompassing everything from server and software management to course planning, design, development, and delivery, as well as faculty and student training. We collaborate with a number of support groups on campus to meet the full range of instructors' and students' requirements in support of eLearning," explains Stein.

"Continuous improvement of the teaching and learning environment is critical to the university's long-term goals, and our partnerships with both WebCT and Sun Microsystems have enabled us to implement an eLearning solution that is scalable, reliable, and cost-effective in support of those goals."

Secrets to Success

The University of Alberta identified several key factors that were instrumental in ensuring the

success of its eLearning initiatives. First, it's important to build support at all levels of the organization—from students and faculty, to academic computing groups, senior administrators, and the university's president. The university's CNS group was instrumental in bringing senior administrators on board with eLearning by demonstrating the mission-critical nature of the application.

Second, it's critical to provide the technology backbone and centrally managed user support services necessary to facilitate the broad adoption of eLearning across campus. As more and more faculty and students began to rely on eLearning, the school realized the paramount importance of providing a reliable, secure, high-performance eLearning environment to ensure user satisfaction. The university has worked closely with WebCT and Sun Microsystems Inc. to build a scalable, high-availability eLearning infrastructure capable of supporting the rapidly growing number of online courses and student seats.

Third, the university realized the importance of fostering faculty ownership of the eLearning program. In moving to a centralized eLearning environment, the university was never looking for a "mandated" solution—it chose a course management system that would be easy to use for novice faculty, as well as provide sophisticated teaching and learning capabilities for faculty to build more advanced courses over time.

The CNS group provides training to assist faculty with online course design and development and collaborates with faculty to develop best practices for eLearning and ways to incorporate Web-based material into their existing courses. While eLearning began with just a few innovative faculty members, that vision has scaled to more than 1,000 instructors who are leveraging eLearning at the university today.

Looking to the Future

The University of Alberta expects a continued 25 percent growth in the number of online courses and user registrations for the next several years. For the 2002-2003 academic year, the school anticipates more than 1,800 courses and approximately 150,000 student registrations.

The phenomenal growth of eLearning across the University of Alberta campus is evidence of the critical role that online learning stands to play in the evolution of the institution. Not as a standalone technology, but as an integral part of its academic strategy and processes.

The institution will benefit from an enterprisewide framework that allows it to fully leverage its content and learning assets, as well as significantly advanced capabilities for scalability and extensibility of the eLearning environment.

In early 2002, the University of Alberta became the first institution to select WebCT Vista, an Academic Enterprise System (AES) that goes beyond the capabilities of a course management system to support enterprise-scale eLearning deployments. The institution will benefit from an enterprisewide framework that allows it to fully leverage its content and learning assets, as well as significantly advanced capabilities for scalability and extensibility of the eLearning environment.

The University of Alberta will also participate in best practices, case studies, alpha and beta test programs, modeling and benchmarking efforts, and will serve as a reference site for other educational institutions. To date, the University of Alberta has placed 40 courses online using WebCT Vista and plans to have several hundred courses migrated over to the AES system by September 2003. Future plans include full deployment of WebCT Vista for more than 150,000 student seats.

"eLearning is truly a mission-critical service for the University of Alberta, and the next generation of WebCT will assist us with achieving several of our core institutional objectives: recruiting and satisfying new students and faculty; providing the best possible learning experience for our students' lives and careers; and creating an improved learning environment inside and outside the classroom," explains Dr. Doug Owram, Provost and Vice President (Academic).

Province-Wide Use

In addition to building online learning within the institution, the University of Alberta serves as a resource to colleges and universities regionally and worldwide. As a WebCT Institute, the university shares its observations, best practices, and expertise in eLearning with members of the Institute Network, and with the WebCT community as a whole.

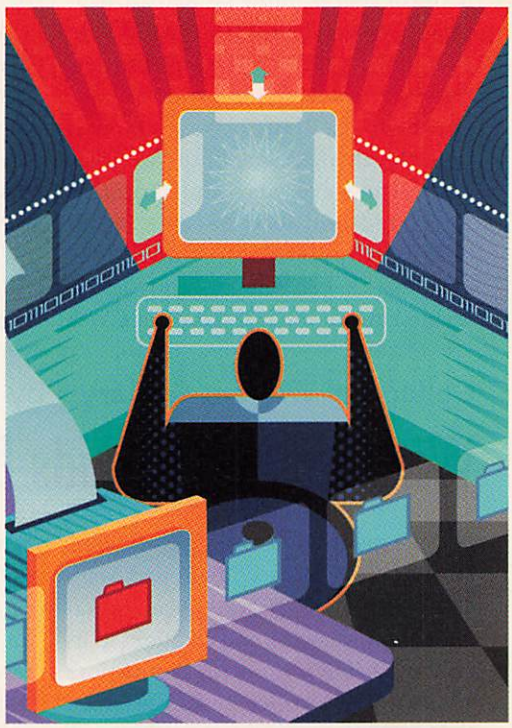
As the first-ever Sun Microsystems Center of Excellence for E-Learning, the school serves as a reference site for eLearning infrastructure, providing advice and assistance on server selection and management issues to educational institutions worldwide.

The Province of Alberta also has a province-wide WebCT license, allowing all educational institutions in the region to develop and launch distributed learning programs using WebCT. Many are already doing so, with programs that include multimedia resources, such as video and audio files and animation.

To learn more about the University of Alberta's eLearning program, visit ***www.ualberta.ca/webct,*** *or contact* ***Susan Stein,*** *Distributed Learning Project Lead and WebCT Administrator, at* ***susan.stein@ualberta.ca.***

Tulane University ▪ by Lisa LeBlanc

AP Department Streamlines Document Workflow



With more than 12,000 undergraduate and graduate students at Tulane University, the accounting department is inundated with paperwork. The university knows the importance of well-managed college finances and has taken a big step toward improving organization by adopting a customized imaging and document management solution. This solution has allowed Tulane's Accounts Payable (AP) department to dramatically cut maintenance, storage, and archiving costs, while increasing overall business efficiencies.

According to Lisa LeBlanc, Accounts Payable manager for Tulane University, her department has been archiving all of its documents on microfilm for the past 10 years, a process that cost nearly $80,000 a year in outsourcing. "Not only did the price increase each year, making it more costly, but there were also a number of problems with this process," she explains. Namely, retrieving the documents in hard copy form or on microfilm was extremely time consuming and expensive. Every request for a document meant someone from AP had to physically retrieve the item. Copying, faxing, and mailing the document meant more time and money.

To make matters worse, Tulane's AP department is physically located away from the rest of the university, isolating the group and making it a challenge to share and access information.

Cutting Costs

In May 2002, the AP department implemented a Xerox solution that combines DocuShare, a Web-based document management application, and the Xerox Document Centre multifunction system that combines printing, copying, scanning, and faxing functionality in one device, with Kofax Ascent Capture scanning. Using the Xerox solution, which integrated with existing software, the AP department cut costs and now works more efficiently. The streamlined process scans documents, such as invoices, purchase orders, employee receipts for reimbursement, and internal transfer forms, directly into DocuShare for storage and easy retrieval.

Xerox Global Services, Xerox Corp.'s consulting division, provided Tulane with a customized solution that addressed its specific needs. "We didn't want the person who scanned the documents to have to manually enter metadata for each document," says LeBlanc. However, the database was based around voucher number taxonomy, so Xerox integrated DocuShare with Oracle Government Financials, the system that stores financial data. Working together, the Financials system would assign a unique voucher number to each document. A customization created by Xerox Global Services enables the system to recognize the assigned numbers and automatically file the documents in a specified DocuShare collection. The entire solution was also integrated with a Microsoft Access database. This enabled Tulane to leverage existing technologies and eliminate steps in its filing process.

Evaluating Processes

Prior to implementing the Xerox imaging and document management solution, Xerox Global Services conducted an assessment of the AP department's paper flow to evaluate daily work processes and determine ways to eliminate costly discrepancies to workflow. Based on that assessment, Xerox recommended an imaging solution that moved the AP department away from its paper-intensive process and provided training to ensure employees would interact efficiently with the new technology.

Currently, more than 50 people use the document management solution and there are plans to expand access to other users in the university.

Overcoming Barriers

According to LeBlanc, Tulane's AP department vastly reduced its microfilm costs. Previously, Tulane spent between $70,000 and $80,000 a year to archive its records. Now, the university is saving at least half that amount per year. The solution also means increased productivity; AP employees no longer need to physically track down paperwork upon each request and go through the mailing/faxing distribution process—it's all done electronically. Retrieving and distributing information is considerably faster, and overall response times have dramatically improved.

In addition, LeBlanc's group consolidated its hardware, reducing maintenance costs and increasing office space. "We've actually gotten rid of two fax machines and two laser printers," she explains. The

department is able to send e-mail and perform laser printing on Xerox Document Centre devices, allowing it to eliminate its file cabinets, transferring files to a storage unit in the warehouse. However, LeBlanc says the most dramatic change came in the way they do business everyday. Collaboration improved and jobs became easier because people in locations campuswide can now instantly access documents on their desktop via a Web browser with DocuShare—overcoming the location barrier.

"In the future, we plan on expanding this project by scanning in and storing journal entries currently stored in file cabinets, W-9 forms, and authorized signature forms," explains LeBlanc. "And down the road, we'll integrate DocuShare with other financial systems."

The success of DocuShare in Tulane's AP department has led the university to begin deploying the document management software within many other departments, such as the Tulane University Health Sciences Center, where it is used to store records for the world's oldest heart study, in the Facilities Services management of vendor documents, and in academic research collaboration with faculty at other institutions.

For more information, contact ***Lisa LeBlanc,*** *Accounts Payable manager for Tulane University, at* ***lleblanc@tulane.edu.***

College of William & Mary ▪ by Scott Fenstermacher

Wireless Access Aids Displaced Students

Like many educational institutions, the College of William and Mary (W&M) undertakes regular renovations, improvements, and additions to its campus facilities. However, as America's second-oldest college established in 1693, W&M's campus renovations often encompass special considerations due to the historical nature and age of its buildings.

Prior to the beginning of a new academic year, the university was renovating one of its residence halls when they uncovered an asbestos problem that forced college officials to postpone opening the building. Unable to complete the renovations before the students arrived for the fall semester, the administration scrambled to find temporary housing for 400 first-year students.

W&M contacted the Governor's Inn, a hotel located near campus, to inquire about possible housing, and rented half of the Inn's three buildings to provide students with temporary accommodations. After tackling the question of where they would live, the school turned its attention to preparing the Inn for 400 college students, with only weeks before the students were scheduled to arrive at its doorstep.

Equal Opportunity

Recognizing that these incoming freshmen needed and expected the same services and resources as on-campus students, W&M set the goal for each displaced student to receive all of the services available on campus, including W&M's extensive technology resources. To accomplish this formidable task, W&M had to find a way to connect the students to the existing infrastructure, which included the university network, phone system, and CATV. Luckily, W&M found they could use the Inn's CATV system and could forward the Inn's phones to the on-campus voice-mail system, but the challenge of connecting the students to the network remained.

"The network is an integral part of the teaching and learning experience here at the College of William and Mary; it's used for presentations in class, Internet research, e-mail, and much more. It is essential for all students—especially first-year students just starting out—to have network access to school resources in order to make their transition to college successful," explains Scott Fenstermacher, Network Manager for the College of William and Mary. "Plus, these students are our customers—they pay for high-speed Internet access as part of their tuition and fees—and deserve the very best in service and support."

A Temporary Solution

Unlike the school's residence halls, the Inn did not offer high-speed Internet access, forcing W&M's IT staff to find a way to create a fast, reliable connection to the campus infrastructure. At the same time, the IT team needed to watch project expenses, as W&M officials wanted to keep costs down for a temporary solution that would only be in place for one semester.

First, W&M reviewed wired options to connect the students. This option was discarded because the Inn is surrounded by historical structures near a restored area of Williamsburg, Va., where a wired solution would be extremely invasive, expensive, and labor-intensive under the time constraints.

The IT team decided that a wireless local area network (WLAN) would be the most efficient and appropriate solution, and completed a site survey to determine the scope of their wireless needs. "After scouting the area, we discovered that we could physically see the roof of a large residence hall on the main campus from one of the buildings we were leasing at the Inn," adds Fenstermacher. "Unfortunately, we could also see several power lines and a very active railroad track in between, which compromised the clear line of sight we needed."

Working with the Inn, W&M surveyed the tallest Inn building and discovered a clear line of sight to the residence hall back on campus. However, the school was not leasing this particular building, and needed a way to connect the two leased

buildings with the Inn's tallest facility. To solve the problem, W&M centralized all of the Category 5 network cabling for each of their leased rooms to two locations. Then, it located a conduit that joined them to the Inn building, which provided the critical line of site connection for the wireless antennas.

Once the Inn was ready, W&M evaluated wireless equipment vendors. The university had previously reviewed wireless products from a variety of vendors for other wireless projects. This allowed them to quickly select Enterasys Networks' RoamAbout R2 wireless access platform for its reputation for reliability, security, and high performance, as well as Enterasys' ability to deliver the equipment on-site quickly.

W&M used six RoamAbout Access Points, three at each end, to create three clear channels. Each of these channels would provide access for one-third of the users. Installation of the antenna was accomplished by installing a portable frame on top of the Governor's Inn and "banding" another set of antennas on one of the residence hall's chimneys. The electronics were housed in waterproof boxes and stationed on the roof of the Inn, and the Ethernet dropped down to a storage closet where fiber converters were installed. On campus, the connections were a bit easier because the wireless antennas were close to the residence hall's attic, which allowed for convenient equipment storage.

Off-Campus Success

The results were outstanding. All three wireless channels came online two days before the students arrived and worked flawlessly until they were removed two days before Christmas. No downtime occurred, and the number of service calls received from the Inn was below the average for the on-campus residence halls. Despite heavy rainstorms, high winds, and electrical storms, there were no disruptions to the wireless connection during the entire fall semester.

"The students were able to enjoy the same resources and tools as the rest of the on-campus students. They could collaborate with classmates over a particular issue in their studies, check course syllabi for new assignments, and e-mail papers to professors. In addition, like many college students who study late into the night, the Inn students could conduct research from the comfort of their rooms, rather than having to walk across town in the middle of the night to the library," explains Fenstermacher. "Most importantly, the students experienced no downtime and had reliable access to college resources as if they had been living on campus the entire time."

With its mission complete and the 400 students now enjoying on-campus housing, W&M's IT staff re-deployed the RoamAbout equipment in other campus facilities. The College of William and Mary, already a wireless user before the residence hall situation, is more enthusiastic than ever about the benefits of wireless networking. It may soon take its wireless coverage campuswide, making the institution one of America's most historic and technically advantaged.

For more information contact ***Scott Fenstermacher****, Network Manager, College of William and Mary, at* ***dsfens@wm.edu.***

Massachusetts Educational Financing Authority (MEFA)

Expanding Services for Financing Higher Ed

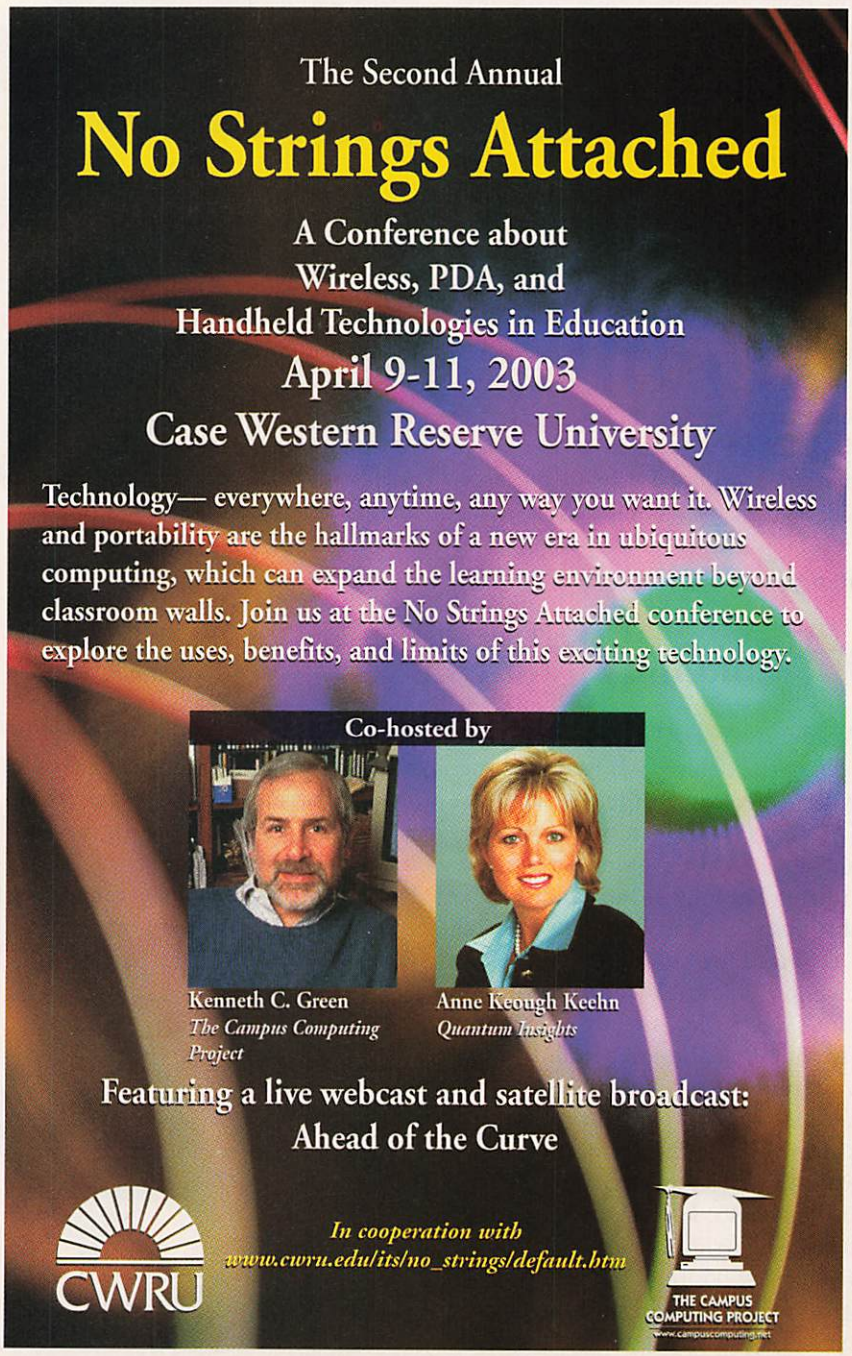
The Massachusetts Educational Financing Authority (MEFA) is a self-financing, not-for-profit authority that was founded in 1982 by the Massachusetts state legislature. Its primary purpose is to assist students, parents, colleges, and universities in financing higher education. This is accomplished by providing critical information necessary for planning and financing education, offering low-cost loans, and establishing structured college savings programs.

MEFA Loan Programs planned to expand service to students and parents by offering the Federal Family Education Loan Programs (FFELP), Stafford (subsidized and unsubsidized), and Parent Loan for Undergraduate Students (PLUS) during the 2002-2003 Academic Year. This set of FFELP programs required MEFA to partner with American Student Assistance (ASA), a federal loan program Guarantor. MEFA also required an information technology solutions provider that possessed the ability to work with CommonLine standard files, which enable a financial aid office to send and receive files directly from the financial aid management systems. After reviewing several technology providers, MEFA discovered that Edgewater Technology, based in Wakefield, Mass., had extensive experience with these file types, having supported ASA's systems development initiatives for more than eight years. Tom Smith, MEFA's Director of Information Technology, explains, "ASA recommended Edgewater Technology to us based on its understanding of the student loan industry, knowledge of ASA's loan processing system, and its history of delivery excellence for ASA."

Hands-On Experience

MEFA initially contacted Edgewater Technology in October 2001. Development began in November 2001, and the system was finally launched in March 2002. Edgewater worked closely with MEFA to understand its business requirements and document them as functional requirements. Technical design and system architecture documents were then created and followed by coding of rules and interfaces based on the functional requirements. When development had been completed, the project team performed three distinct testing phases: QA Test, User Acceptance Test, and External Customer Test. Upon successful completion of the test phases, the system was implemented at MEFA.

Edgewater chose to use a SQL Server database and the C++ programming language because MEFA had a familiarity with both, as well as maintained a SQL Server database for another system. By choosing these technologies, it minimized the learning curve for MEFA employees. Knowledge transfer and training for technical users was performed throughout the project ensuring MEFA had a solid understanding of the system and a high comfort level with the technology prior to the system going live. Having Edgewater Technology developers side-by-side in User Testing scenarios and during the transition from development to production enabled MEFA's Information Technology staff to take the project in-house easily and efficiently. Database Administrators and Local Area Network (LAN) personnel also benefited from the hands-on training.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THE CAMPUS COMPUTING PROJECT

System Enhancements

According to Smith, "The system has operated virtually bug-free since it has been deployed." MEFA's system has required some enhancements over the past year to better manipulate data that's being sent to them from the loan originator. The enhancements provided additional error checking logic at the attribute level and immediate e-mail notification of errors to the system administrator. As far as hang-ups go, Smith explains, "Coordination of testing with MEFA's student loan partner posed some challenges due to MEFA's implementation schedule, but the problems could be characterized as insignificant."

MEFA's new system enabled FFELP data to be securely transferred between MEFA, ASA, and its loan-servicing partner. In addition, MEFA is now able to closely monitor its loan processing activities, while storing appropriate loan data. With Edgewater's expertise in developing applications for the loan processing industry, MEFA will be able to expand its service offerings and interface with ASA efficiently and effectively. "Edgewater Technology has proven to be extremely efficient and supportive," says Smith.

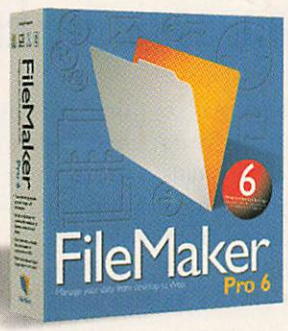
For more information, visit www.mefa.org, or contact ***Tom Smith****, Director of Information Technology, MEFA, at* ***tsmith@mefa.org.***

FEATURED PRODUCT

Format-Friendly FileMaker Pro 6

Database software is perhaps the most powerful application in the office environment. Databases allow users to instantly view data, relationships, and changes in a project, as well as manage abstract connections at a level that the average human cannot match. The original rudimentary database was groundbreaking—the current generation is both simpler to use and more powerful than ever.

FileMaker Pro 6, the latest version of the leading workgroup database software program, improves upon itself with new features, including the ability to interface with an expanded number of applications, simplified transfer and sharing of data, and some nifty design capabilities. The user-friendly software also aims to be even friendlier and more accessible in this version.



Using FileMaker Pro 6, you can gather information from virtually any application, including Excel, SAP, and Word. Users can easily drag and drop Excel spreadsheets into the database—the importing process retains column headings and data types, automatically converting them into the appropriate FileMaker fields. The drag-and-drop feature not only simplifies the transfer of data from spreadsheet to database, but it opens opportunities for sharing the data more easily among workgroups.

FileMaker Pro is in use at many college and university departments. The University of Tennessee Informatics Center for Mouse Neurogenetics uses FileMaker to keep records on sources of animals, their dates of birth, litter size, sex, weight, and the many traits that the lab studies. According to Robert Williams, Director of the Center, the FileMaker solution is part of the evolving use of technology in the lab. Says Williams, "We decided several years ago to stop using laboratory notebooks. Maintaining records in Excel was also failing. What we particularly liked about FileMaker is the simplicity of design and maintenance. We also use MySQL but setting up a Web-based MySQL database takes a skilled database programmer. Our [FileMaker] databases are extremely effective and comparatively inexpensive."

New to this version of the product is the ability to import images and their related data into FileMaker Pro 6 directly from a digital camera or desktop folder. Users can now incorporate JPEG and GIF files, video footage, and MP3 sound files into the database. This feature can be applied in many academic arenas, from admissions to research. Imagine a new student file that included not only printed information about each student, but a photo as well. Or a biologist's database of species, each organism catalogued with a photograph, as well as a recording of its call or cry.

FileMaker also offers two-way dynamic ODBC exchange, which allows users to access and gather data from ODBC-compliant corporate data sources such as Oracle and Microsoft SQL Server. For developers and power users, FileMaker has expanded the array of compatible desktop applications even further with new integrated XML support.

For those who use a database for communication or reporting purposes, FileMaker provides communication, design, and layout tools that help create a consistent and appealing display. FileMaker Pro 6 interacts seamlessly with Microsoft Office. Users can exchange data with Excel files, broadcast e-mail through Outlook or Entourage, and create mail merges between FileMaker and Word documents. FileMaker also lets users work across platforms: Windows XP, Windows 2000, Mac OS, Palm, and Pocket PC are all supported.

New to this version is a format painter that allows users to copy particular design

elements (color, font size, fill pattern) and apply those attributes to other text blocks or objects. The format painter can even apply those attributes across solutions in different files. Comprehensive graphic tools also apply special effects, such as engraving and embossing, and customize the appearance and operation of buttons. A large color palette lets users create custom and Web-safe colors. Layout themes are available to create a consistent appearance across all reports. High-contrast layout themes are included for visually impaired users.

Task automation is important in database work, and this version of FileMaker Pro aims to simplify that further. Pro 6 succeeds as a stand-alone tool but also works as a relational database. Users can specify how data will be shared among all databases in the system. Entering data one time updates all appropriate databases. Users can also create scripts to automate routine tasks and menu commands, from running reports to sending e-mail. Users of previous versions of the database can import the scripts they've generated in the past into this new version. XML export features let users export data from FileMaker Pro 6 into an open-ended number of applications by transforming the data into a text-based format via an XSLT stylesheet. The exported data can then be shared with other users, even those not using FileMaker.

For users who must share database information across the Internet or an intranet, FileMaker Pro 6 Unlimited is a better choice. This product allows the unlimited sharing of FileMaker files over the Web, with built-in support for leading Web servers. FileMaker Pro Unlimited may be a better choice for work groups that have a need to access, search, add, or update records as individuals and as part of a team.

For more information about FileMaker products, visit their Web site, www.filemaker.com, or call (408) 987-7000.

PRODUCT ROUND-UP

Storage Encompasses the Enterprise

Illustration by Dave Stalter

Storage media has become so sophisticated in the last few years that there is now a practical solution available for every business problem you might encounter, from storage-area networks (SANs) and network-attached storage (NAS), to storage systems that are easily expandable and then those that smartly manage a multi-departmental enterprise. As university storage and archival requirements change, and as the demand for smarter and more secure storage escalate, administrators and information systems staff must consider some of the trade-offs that exist on every individual campus. Here is a sampling of the latest storage offerings as you consider your storage needs.

Dell/EMC

Dell networked storage systems and services allow higher education institutions to add affordable storage capacity to their networks for applications such as archived student records, digital content, teaching materials, and e-mail. These products feature the availability, data protection, performance, and scalability needed to help reduce unplanned downtime and improve application deployment, while allowing institutions to grow their storage systems on demand. The Dell/EMC CX200 storage-area network system with 2GB Fibre Channel technology, up to 200MB/s throughput, and capacity up to 4.4TB, is one option. Dell also offers a PowerVault 775N network-attached storage server with dual Intel Xeon processors, dual embedded Giga slots, and a Dual Channel RAID on the motherboard (ROMB), in a 2U rack dense form factor. Dell also offers professional service offerings to assist in planning, installation, and deployment.

Contact: Dell Computer Corp., Round Rock, Texas; (800) 626-8286; www.dell.com/storage.

HP

The HP StorageWorks NAS b3000 is targeted at organizations needing NAS server/storage consolidation with connectivity to an entry-level SAN. The NAS b3000 scales to 27TB with embedded switches, and it can scale to even higher capacity with external options. In the "fused" environment HP has created, the server delivers the block-level information of SAN to databases and applications and the file-level information of NAS to applications and users. This occurs in a single, managed storage infrastructure and achieves outstanding levels of availability by including RAID, Advanced Data Guarding (ADG), and fully integrated software packages, as well as no-single-point-of-failure clustered

configurations. The HP Storage Works NAS b3000 is designed to address difficult-to-manage "islands" of storage through highly reliable, high-capacity, high-performance file server consolidation. This particular configuration offers flexibility to customers and provides investment protection with a long-term strategy and components that grow with the organization.
Contact: Hewlett-Packard Co., Palo Alto, Calif.; (650) 857-1501; www.hp.com/go/windowspowerednas.

Plasmon

Plasmon's D-Series libraries use the latest DVD/CD Multi Drive technology. The D-Series allows mixing of media to suit most archiving applications and user storage requirements. Plasmon's D-Series and Enterprise D-Series libraries are available in multiple configurations, including the D-120, D-240, D-480, D-875, D-1525, and the D-2175. The product numbers reflect the number of slots in each. Each library is available with Plasmon's patented Rotation Station, a device that actually flips double-sided media. Storage capacities range from 758GB to more than 20TB. Each Plasmon D-Series library comes standard with Multi Drives that support reading and writing of DVD-RAM, DVD-R, DVD-RW, CD-R, and CD-RW media. DVD-R offers Write-Once-Read-Many (WORM) protection along with 9.4GB capacities and high throughput. DVD-RAM is re-writeable and supports double-sided 9.4GB media. Each model is equipped with a patented dual-picker for faster disc exchanges and an LVD interface for longer cable connections. DVD/CD media is placed on trays inside 10-disc magazines for maximum protection and extreme density. Each magazine is utilized inside the library as shelving for the tray-based media. Trays are captured by the dual-picker for movement inside the library so the picker never touches the media. A single media mail-slot is used for import/export of media from the library.
Contact: Plasmon Plc, Englewood, Colo.; (800) 451-6845; www.plasmon.com.

3PAR

The 3PAR InServ Storage Server Family is the hardware foundation of the 3PAR Utility Storage offering. 3PAR InServ Storage Servers use a cluster-based architecture, known as the 3PAR InSpire Architecture, capable of delivering up to five times the performance of monolithic and modular storage architectures. The modularity of the architecture delivers a single storage platform that scales continuously from the very small to the very large. Users can also fine-tune the product to suit their needs, adding independent, granular, and common increments of capacity, connectivity, and performance on demand. Because the architecture is cluster-based, with each node running an independent copy of the software, 3PAR's storage servers offer complete fault tolerance of both hardware and software. Three models are available, which accommodate up to two, four, and eight 3PAR controller nodes. The high-performance data movement engines (or nodes) are designed to handle mixed workloads simultaneously. The drive chassis hold up to 40 disk drives, delivering close to 6TB in a single unit or nearly 48TB in a single 19-inch standard rack.
Contact: 3PAR, Fremont, Calif.; (510) 413-5699; www.3par.com.

Network Appliance

Network Appliance offers both storage appliances and related software. NetApp filers are designed for easy standards-based integration, guaranteeing rapid deployment, simplified ongoing management, and low cost of ownership. Various models are available, up to the FAS960, which is capable of managing 24TB of data in one system and 8TB in one file system. NetApp storage solutions are appropriate choices for storing, safeguarding, and serving Microsoft Exchange 2000 data. Numerous accounts for faculty and staff members and students can reside on the same NetApp filer as well as departmental shared directories. SnapManager and SnapRestore software are key enabling technologies for Exchange on NetApp filers. SnapManager gives an organization a comprehensive data management solution for hosting and automating backup and restore of the Exchange store. SnapManager and SnapRestore can reduce backup time from hours to seconds and simplify the entire backup-and-recovery process.
Contact: Network Appliance Inc., Sunnyvale, Calif.; (408) 822-6000; www.networkappliance.com.

Nexsan

Nexsan Technologies' InfiniSAN line of disk-based storage solutions includes the ATAboy2, which provides next generation EnterpriseATA performance, reliability, and high data availability for the most demanding storage and data-delivery applications. Available with SCSI or Fibre connectivity, Nexsan's award-winning ATAboy2 disk-based systems scale from a correct cost, entry-level solution while providing unchallenged expandability and superior fault-tolerance supporting the storage industry's most demanding small to enterprise-class applications. ATAboy2 was the winner of *Storage Magazine's* Product of the Year in 2002.
Contact: Nexsan Technologies, Woodland Hills, Calif.; (866) 4-NEXSAN; www.nexsan.com.

IBM

IBM's TotalStorage technology, based on open standards and interoperability, addresses a wide array of storage needs, including disk, tape, middleware, database, ISV applications, services, and financing. Among the newest entries in the portfolio of products is the Enterprise Storage Server, Models 800 and 800 Turbo, the most significant upgrade since the product, better known as "Shark" was introduced in 1999. The new Model doubles performance and storage consolidation while cutting processing time in half. IBM TotalStorage products also include IBM's midrange FAStT storage servers, tape storage, and NAS offerings.
Contact: IBM Corp., White Plains, N.Y.; (800) IBM-4-YOU; www.ibm.com.

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Digital Tweed, *continued from page 24*

users generally pay, per page, to copy content from books, magazines, and journal articles. That's what college students are willing to pay for the convenience of having materials from the stacks and reserve reading rooms in their dorm rooms and off-campus residences.

So the market experience indicates that, yes, content has value. Consumers—college students and faculty—will pay for content, when the content is "fairly" and thoughtfully priced. The problem, of course, is that providers and users have very different expectations about the value of content.

The library experience suggests that the market metric should be dimes, not dollars. Unfortunately, book, music, and media publishers still seem focused on dollars.

There is hope. While the content providers in the book, music, and media industries have sought protection from the courts, they are also learning lessons from the market. Film studios initially protested the arrival of VCRs 20 years ago, fearing this new technology would kill box office revenues. Yet the films studios have found home video to be a huge market. Today in the United States, home videos—the rental and the sale of VHS and DVD products—generate almost twice the revenue of movie tickets—roughly $10 billion for box office sales vs. approximately $19 billion for VHS and DVD rentals and sales. In the early days of VHS, studios would often price movies at $100; today, DVDs for many recent releases now sell for less than $20.

Recalling one key mantra of the Internet economy, yes, content may yet become king on the Web—but not yet—and not until providers and users can come to reasonable agreements about fair value. The experience with video suggests it will take time before all participants learn the real lessons about the real value of content in real markets. Let's hope it doesn't take another two decades.

Reflections, *continued from page 42*

While there are many promising attempts in the digital textbook arena—KluwerOnline being among the best—even *it* still blindly copies textbooks to digital format, including page numbers and even indexes to those page numbers. Authors of textbooks need to stop writing for paper. And purveyors of digital information need to stop building digital analogs of paper.

Books are wonderful things, but eBooks are an awful idea. The power of intelligent digital information storage and retrieval systems can be used to build personal information devices that fulfill our wildest information dreams. But to do that effectively, we need to abandon the comforting paradigm of the book.

Howard Strauss is the manager of technology strategy and outreach at Princeton University.

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Howard Strauss

REFLECTIONS

ANOTHER LOOK AT EDUCATION TECHNOLOGY

eBooks Haven't Worked—Here's What Might

You may not think of paper as an information storage and retrieval system, but it is one. In fact, paper is an incredibly inexpensive, portable, and durable medium that requires no electricity or batteries. Binding a few sheets of paper together makes a book. But while books have greatly evolved since the Gutenberg Bible of 1455, they have never overcome the limitations of paper.

It's not surprising, then, that technologists have tried to improve upon books by transforming them into digital media. With regularity that rivals the seasons, eBooks and eBook readers are announced and quietly forgotten. Of course there is a current crop of them that looks promising, as they always do, but most eBooks have all of the limitations of paper and the worst characteristics of current computers and their ilk.

Paper is a wonderful medium that is static, linear, and has a deplorably low information-storage density. But the key characteristic of books is information, not paper. Although novels, dictionaries, journals, and textbooks use the same paper book format, they are completely different. Each different kind of book needs its own unique electronic incarnation that takes full advantage of the power of intelligent devices and frees its information from the bonds of paper technology.

For example, novels are part of a class of information that enlightens and entertains. Yet reading one on a PDA, laptop, tablet, or expensive reader is an act of desperation. So here's how a novel might be better done in digital format:

The information for a novel (or textbook, reference book, or other information source) should be stored in a standard format that allows it to be accessed from many different devices. The software that provides the access should also be able to run on a variety of devices. My collection of novels

would be on a tiny pocket-sized device that I'll call myOwn. "My" because intelligent devices are adaptable and I should be able to personalize each of them to my own whims and desires.

myOwn stores the text of thousands of books, but because it reads them to me, at most it needs only a tiny screen. myOwn is not a book-on-tape player, but a text-to-speech device that lets me drive or do other things while I listen to it read to me. It allows me to choose who will narrate a story and the various voices that will be assigned to different characters using voice patterns of people alive and deceased. The use of different fonts to represent different speakers in a document doesn't surprise anyone. Voice patterns are just vocal fonts. myOwn could read *MacBeth* with Howard Cosell's voice assigned to Duncan and Meryl Streep's to Lady MacBeth.

Because myOwn performs text-to-speech, it could easily talk faster or slower without the annoying change in pitch that a tape recording would give. You can listen much faster than you can read. To actually read from myOwn, just connect it to any device that displays information: a TV, laptop, PDA, or whatever.

myOwn is also a fine device for reference material, such as dictionaries or phone books, that return a small amount of information suitable for its tiny screen. But like a PDA screen, it's an awful place to display Web sites and other large quantities of text and images. While myOwn has a tiny keyboard, most of the time you'd just talk to it and it would respond verbally, or you could read the answer on its screen.

myOwn doesn't work for textbooks, which are really collections of learning materials. Authors of textbooks, due to the limitations of paper, create pages and chapters, limit the static exercises tied to each chapter, and provide no easy way to get to the source material used to create the book. While students learn best by doing, paper does not allow simulations and other interactive learning. Professors rarely want to use a single book and almost never agree with an author's organization and choice of exercises. Without the limitations of paper they don't have to.

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this rewrites campus technology.

higher education calls for higher functioning technology. Introducing a new class of technology destined to change the way your campus works: the Compaq Tablet PC. It's an all-in-one laptop, desktop, and spiral notebook that is surprisingly lightweight in a backpack, amazingly fast at research and rendering, and unbelievably versatile on campus. You can attach the keyboard for reports, or use the stylus during lectures to take notes — diagrams, highlights, and all. And it's priced under $1,700. The unique demands of higher education deserve unique solutions. So we rewrote the book on campus technology. Now, your professors and scholars can put ideas in writing — and on the hard drive. For more information, call 1-877-480-HiED, or visit our website.

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